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ADVISORY
COUNCIL *on*
SOCIAL
SECURITY

**Income Security and Health
Care: Economic Implications
1991-2020**

**An Expert Panel Report to
the Advisory Council on
Social Security**

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Washington, DC

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Income Security and Health Care: Economic Implications 1991–2020

An Expert Panel Report to the Advisory Council on Social Security

A Report of the
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Dear Ms. Steelman:

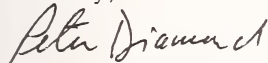
The Expert Panel on the Future of Income Security and Health Care Financing convened by the Advisory Council on Social Security is pleased to submit its report to you.

The Panel was asked to: depict the world of 2020, assuming no significant changes are made in current policy; and examine the issues required to be addressed if the challenge of an aging population is not to adversely affect the performance of the economy, the well-being of the elderly and the well-being of the rest of society.

Based on its analysis of the year 2020 the Panel found that the aging of the population, alone, will not pose an undue burden on society or on individuals. More resources will be needed to support the Social Security and employer-sponsored pension systems, but the new levels should not, by themselves, cause an excessive burden. In contrast, the projected cost increase to 2020 of the entire U.S. health care system is dramatic under all plausible scenarios. The major factor is not demography. Instead, the growth comes from the ongoing evolution in technology, in the way that we use health care services, and in the structure of our health care delivery and financing system. In the absence of action today, the projections we examined indicate that health care will absorb an alarming share of the Nation's resources by 2020 and that the number of Americans who are inadequately insured will increase. The Panel concluded that action is needed now to address together the dual challenges of expanding coverage to those who are inadequately insured and of containing the cost of health care.

The Panel appreciates the opportunity the Advisory Council gave us to serve in this important endeavor.

Sincerely,



Peter Diamond, Ph.D.
Chair, Expert Panel on the
Future of Income Security and Health Care Financing

FOREWORD

The report of the Expert Panel on the Future of Income Security and Health Care Financing, prepared at the direction of the 1991 Advisory Council on Social Security, is a work of extraordinary value. This report, *Income Security and Health Care: Economic Implications 1991-2020*, fulfills the Council's expectations for the breadth of its vision and the depth of its scholarship. It is essential reading for policy makers and planners in both the public and private sectors as well as for scholars and students of social welfare and health care policy.

The Panel's discussion of criteria on which to base the evaluation of all health care reform proposals is of particular importance, as is the research agenda the Panel proposed. Due to the dire trends identified in this report, it is my sincere hope that this work will be continued through the offices of the Trustees of the Social Security and Medicare trust funds.

On behalf of the Advisory Council, I want to express our appreciation to each Panel member for their time and energy in creating this essential foundation for understanding the future and making clear our nation's stark choices.

A handwritten signature in dark ink, appearing to read "Deborah Steelman", with a long horizontal flourish extending to the right.

Deborah Steelman, Esq.

Chair

Advisory Council on Social Security

PREFACE

The Expert Panel on the Future of Income Security and Health Care Financing was convened by the Advisory Council on Social Security in January 1991. The purpose of the Panel was to provide a broad review of the economic and social policy issues that must be addressed in dealing with the combined financing of the health, income security, and long-term care needs of an aging population.

The impetus for convening the Panel came from merging the results of two prior technical panels: the Social Security Technical Panel, which reviewed the long-range projections of the Social Security program; and the Health Technical Panel, which reviewed long-range projections of Medicare (Hospital Insurance and Supplementary Medical Insurance combined). Merging these projections showed that the combined cost of Social Security and Medicare would grow substantially between 1990 and 2020. Furthermore, these programs do not reflect the anticipated growth in demand for long-term care. These findings raised concerns about the Nation's ability meet the total cost of an aging society. Specifically, the Panel was asked to:

- depict the world of 2020 assuming no significant changes are made in current policy and taking account of the entire economy, not just Social Security and Medicare projections; and
- examine the issues required to be addressed if the challenge of an aging population is not to adversely affect the performance of the economy, the well-being of the elderly, and the well-being of the rest of society.

Most members of the Expert Panel are economists or actuaries who had served on one of the two prior technical panels. The Panel also included two experts on long-term care. The Panel met six times, beginning in January 1991, and concluded its work in December.

This report represents the findings of the Expert Panel. Based on its analysis of 2020 the Panel found that the aging of the population, alone, will not pose an undue burden on society or on individuals. Although more resources will be needed to support the Social Security and employer-sponsored pension systems, the new levels should not, by themselves, cause an excessive burden. In contrast, the projected cost increase to 2020 of the entire U.S. health care system is dramatic under all plausible scenarios. The major factor is not demography. Instead, the growth comes from the ongoing evolution in technology, in the way that we use health care services, and in the structure of our health care delivery and financing system. In the absence of action today, the projections we examined indicate that health care will absorb an alarming share of the Nation's resources by 2020 and that the number of Americans who are inadequately insured will increase. The Panel concluded that action is needed now to address together the dual challenges of expanding coverage to those who are inadequately insured and of containing the cost of health care.

In performing its analysis of 2020, the Panel relied on projections provided by the Office of the Actuary (OAct) of the Health Care Financing Administration (HCFA) and the OAct of the Social Security Administration (SSA), as well as other sources. Unless otherwise noted, the projections were based on alternative II economic and demographic assumptions in the 1991 report of the Trustees of the Old-Age, Survivors and Disability Insurance Trust Funds. The Panel used these assumptions for the purpose of its analysis, rather than developing its own.

The Panel could not have performed its analysis without the data, projections and expert advice it received from the following organizations: OAct, HCFA, directed by Roland King; OAct, SSA, directed by Harry C. Ballantyne; the Office of Research and Statistics, SSA, directed by Peggy S. Trout; and the Office of Research and Demonstrations, HCFA, directed by Joseph R. Antos. The Panel appreciates the responsiveness and expertise of individuals who provided estimates for the Panel -- in particular, Sally Sonnefeld Burner, Office of National Cost Estimates, OAct, HCFA, and Steven C. Goss, Supervisory Actuary, OAct, SSA.

The Panel also thanks the staff of the Advisory Council for their fine support. In particular, it thanks Nancy Row and Virginia Reno, for their sustained commitment to the project and their help with the final report under extreme time pressure. Contributions to the project were also made by Ann D. LaBelle, Michael Zambonato, Barbara Cooper and Adele Eley of the Council staff and David Cooper of the Office of the Assistant Secretary for Planning and Evaluation. Staff of Project HOPE, under the direction of Louis P. Garrison, also contributed to the project. Robyn Stone and Leigh Ann White produced the charts and much of the text in the second chapter of the report.

Ann D. LaBelle, Executive Director of the Advisory Council, conveyed to the Panel the initial vision for this project and allocated the resources to fulfill it. Without the Council staff's support, the Panel could not have completed its work.

A handwritten signature in cursive script, reading "Peter Diamond".

Peter Diamond, Chair
December, 1991

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EXECUTIVE SUMMARY

The year 2020, which seems far into the future, is actually closer to today than is the year 1960. Thus most readers can visualize the year 2020, at least in a demographic context, by projecting nearly 30 years into the future. Those of us who represent the "first wave of the baby boom" will be in our seventies, most likely retired, receiving our Social Security checks, and using our Medicare benefits. Our children will be well settled into their career paths, contributing to Medicare and Social Security, paying for private insurance for their families, and saving for their retirement. Our grandchildren will be in school or possibly just starting their careers.

The charge to the Expert Panel, appointed by the 1991 Advisory Council on Social Security, was to provide a broad review of the economic and social policy issues that must be addressed in considering the combined financing of the health, income security and long-term care needs of an aging population. Thus, the task before the Expert Panel on the Future of Income Security and Health Care Financing was to project the health care financing and income security environment of today forward to 2020 and to assess what implications the projections have for the policy-makers of today.

The Panel limited its analysis in two important ways: (1) The Panel assumed no significant changes in current policy and (2) The Panel built its analysis largely from existing data projections, recognizing there is insufficient time and resources to do its own projections. The Panel acknowledges inherent limitations in making long-range projections, since changes in assumptions and policy actions could alter the outcome. Additionally, advances in science and technology could alter outcomes in dramatic and unpredictable ways.

Nevertheless, the Panel felt that the exercises would be instructive and relevant. Unless some assessment of the future is made, there is no basis for taking action today that could beneficially affect the future.

The projections indicate that the world of 2020 will be characterized by an aging society. When compared with children and working age adults, the elderly are—and will be—the fastest growing population segment. In 2020, the elderly who are age 65 and older will represent more than 16 percent of the population, compared with 12 percent today. The elderly who are age 85 and older are projected to increase the fastest, nearly doubling between now and 2020. The number of workers to support each beneficiary of the Social Security program for the elderly (and others, such as the disabled) will decline from 3.4 per beneficiary in 1990 to 2.4 in 2020. In general, the elderly in 2020 will have higher real incomes than today's elderly, although women living alone and the elderly over 85 will still have low levels of income. Consumption of other goods and services and assets of the elderly will be reduced by higher expenditures for medical care.

Most significantly, the projections show the striking consequences if health care expenditures continue to grow at their historical rate. Projections were calculated based on four different assumptions of growth rates. One of the projections assumes a very modest reduction in the rate of growth in real per capita health spending from what we have recently experienced and still shows health care consuming 31.5 percent of GNP in 2020 compared with the 1990 level of 12.2 percent. Another projection assumes a greater reduction in the historical rate of growth and shows health care reaching 22.7 percent of GNP in 2020. These two projections, used to illustrate a range of possible implications, are the basis for much of the comparative analysis in the report.

The Panel considered these trends, the estimates of resources available to the Nation and to the individual in 2020 and the resulting implications for our future economy.

Impact on the Nation's Economy in 2020

A major part of the Panel's analysis was a macroeconomic view of the economy in 2020 focusing on the allocation of gross national product. The Panel's assumptions about the level of GNP in 2020 were based on the intermediate economic and demographic assumptions from the 1991 Trustees Reports on Old Age and Survivors Disability Insurance (OASDI), Hospital Insurance (HI), and Supplementary Medical Insurance (SMI). The Panel developed an analytical exercise in which two different economic scenarios of 2020 were constructed. The scenarios differ only with respect to the two different projections of health care expenditures in 2020 identified above.

As a result of this exercise, the Panel made the following observations for 2020:

- Between now and 2020, the aging of the population has only a modest effect on the Nation's economic patterns.
 - The demographic change should have only a moderate effect on the pattern of nonmedical consumption to which our flexible market economy should be able to adjust.
 - Many elderly sell financial assets after retirement because they consume more than their incomes. Therefore, the aging of the population is expected to reduce the national savings rate, but

the effect appears to be moderate. Although some elderly sell their houses, any increase in sales is unlikely to reduce housing prices substantially because the changes will happen slowly enough to allow the housing sector to adjust.

- More resources will be required to support the public and private retirement systems (i.e., Social Security and employer-sponsored retirement plans), but the new levels should not, by themselves, cause an excessive burden.
- With the inclusion of health care expenditure growth, however, the analysis indicates that the Nation cannot continue its pattern of consumption growth and at the same time devote an ever-increasing share of GNP to health care services. The resource requirements for health care leave less available for the other needs of the Nation.
- The decumulation by the foreign sector of current financial assets of the United States and possible reduction of direct investments in the United States by the foreign sector because of aging demographics of other developed nations will likely result in even greater need for capital than that reflected in the alternative scenarios.
- It is unlikely that the United States will experience a growth in the economy that exceeds the projected increase in health care expenditures. Based on the exercise conducted by the Panel, the economy would have to grow about three times as fast as the growth projected by the Trustees. Consequently, unless the growth in health care expenditures is significantly reduced, we cannot expect to "grow out" of the effect of rising health care expenditures. Rather, it seems

more likely that the United States may further decrease savings and other consumption items.

- Although there was not a detailed study of the economy after 2020, it was noted that the effects of an aging population should accelerate between 2020 and 2030 because of the complete retirement of the baby-boom cohort. This effect and the cost of long-term care services will have additional significant implications between 2020 and 2040.

Health Care Projections to 2020

Four health care projections, developed by the Health Care Financing Administration,¹ were available to the Panel. Over the past 20 years real per capita health care expenditures grew by 4.4 percent per year, on average. During the last 10 years they grew at an average annual rate of 4.7 percent. The comparable average rates of growth over the next 30 years under the four projections are summarized in the following table:

<u>Projection</u>	<u>Percent of GNP in 2020</u>	<u>Rate of Real² Per Capita Growth Assumptions</u>
1	36.0 percent	4.7 percent—a continuation of existing trends over the past decade

¹Office of the Actuary, HCFA

²In constant dollars using the GNP implicit price deflator

<u>Projection</u>	<u>Percent of GNP in 2020</u>	<u>Rate of Real³ Per Capita Growth Assumptions</u>
2	31.5 percent	4.3 percent—slower than the past decade but consistent with longer-term trends
3	22.7 percent	3.1 percent—significant slowing of existing trends
4	13.7 percent	1.4 percent—immediate and drastic curtailment of health expenditures

The Panel recognizes that these projections are not true predictions of health care consumption. Health care consumption may be very different, as health care expenditures become influenced by future policy decisions and other unknown factors. However, in the absence of major policy changes, the Panel believes that the Projections 1, 2, and 3 are plausible. The Panel believes that Projection 4—which assumes immediate and drastic curtailment in the rate of growth and is reviewed primarily for illustrative purposes—is implausible.

The Panel found it noteworthy that the aging of the population contributes only modestly to the escalating health care expenditures. Changes in the age and sex distribution of the population from 1990 to 2020 account for a

³In constant dollars using the general GNP price deflator

relatively small part of the projected growth in medical care expenditures as a percent of GNP. The age distribution will have an impact on the allocation of health care expenditures between private and public programs, because of the increased costs of Medicare resulting from the retirement of the baby boom.

Growing intensity in each service delivered has been a significant contributor to cost escalation over the last 20 years. The effects of population aging alone are less than popularly believed. Over the past 10 years, medical inflation, intensity, and utilization have been the most significant contributors to cost escalation. Intensity and utilization—as distinguished from inflation and population growth—have the greatest potential for being influenced by changes in health policy.

Effect on Individuals in 2020

The Expert Panel examined demographic, income and health care projections to assess what 2020 could be like from an individual's perspective, considering Projections 2 and 3 of health care expenditures.

Income for workers and the elderly will continue to increase over the next 30 years.

- On average, income for the elderly will increase slightly faster than for the average worker. The income of those over 85 and unmarried women will grow less rapidly than that of the younger elderly.
- Increases in income for the elderly are largely attributable to projected increases in the payment of private pensions. The Panel recognizes

that many uncertainties are associated with projecting the future of pension systems.

- In recent decades, growing inequalities in the earnings distribution of men and of women portend growing inequalities in total household incomes.

The expected income gains of workers may be offset by increased expenditures for health care and support for social programs for the elderly.

- The cost of Social Security and both parts of Medicare (HI and SMI) combined, expressed as a percent of taxable payroll is projected to approximately double over the next 30 years from approximately 15 percent to approximately 32 percent (under health spending Projection 2) or to 26 percent (under health spending Projection 3).
 - Part A (HI) of Medicare⁴ is funded largely by payroll tax. The 1990 rate of combined employee/employer contributions is 2.9 percent. The cost of HI is projected to rise to between 6.4 (Projection 3) and 8.9 percent (Projection 2) in 2020.
 - Part B (SMI) of Medicare is financed through premiums and general revenues, not by a payroll tax; however, expressing the revenue required as a percentage of payroll is useful. The effect of this calculation shows Part B rising from an equivalent of

⁴The 1991 Trustees Report indicates Medicare Trust Funds for Part A will be depleted by 2005. The calculation of the contribution rate assumes Part A will continue in its present form and will be adequately funded by setting tax rates equal to expenditures in the future.

1.79 percent of payroll in 1990 to between 6.2 (Projection 3) and 8.7 percent (Projections 2) of payroll in 2020.

- The cost of Social Security is influenced largely by the growing number of beneficiaries relative to workers. In 2020, the cost of Social Security will exceed projected annual revenue from payroll taxes by about 1 percent of taxable payroll.
- In addition to increased payroll taxes, the adult working age population can expect increases in out-of-pocket costs for health care and health insurance premiums.
 - Private insurers are expected to more than triple their per capita payout, in real terms, under Projection 2, or double under Projection 3.
 - Such increases may indicate significant growth in the share of employee compensation allocated to health insurance—either as fringe benefits financed by employers or as employee contribution from wages.

The income gains of the elderly are also expected to be offset by expenditures related to medical care. Medicare only covers approximately 45 percent of the elderly's total health care costs, including long-term care.

- The rise in Medicare costs could mean the elderly will experience a rise in the premium for Part B. If the Part B premium continued to fund 25 percent of the Part B program, in 2020 the premium would roughly triple as a share of the median income of the elderly (under Projection 2) or more than double (under Projection 3).

-
- Out-of-pocket health care expenditures are much larger for the elderly today than for the nonelderly and are expected to continue to increase in the future.
 - Nearly half of all nursing home care expense is paid for directly out of pocket. Estimates indicate actual per capita out-of-pocket costs could double by 2020. Approximately two of every five persons surviving to the age of 65 are estimated to experience a stay in a nursing home.

The number of uninsured could be significantly influenced by future policy changes. A person's willingness and ability to obtain health insurance is related to the person's level of real wages and income, relative to the price of private health insurance and the availability of uncompensated care for persons uninsured. Under assumptions used in this report, real wages are assumed to grow by 1.1 percent, while real per capita health care spending is projected to rise by 4.3 and 3.2 percent, respectively, under Projections 2 and 3. The panel anticipates that the difference in real wage and the price of insurance, especially if providers continue to provide uncompensated care under the same terms as at present, may well lead to an increase in the number of uninsured. This trend will be slowed, however, by the change in the age distribution, which will lead to a larger fraction of the population having coverage under Medicare.

Risk and Uncertainties in 2020

The Panel considered what risks and uncertainties might face the elderly of 2020 with respect to the public and private institutions now available to today's elderly.

The Panel concluded that the realization of the benefits expected from Social Security and employer-sponsored pensions, which are a major factor in the financial well-being of the elderly in 2020, is highly likely, although certain risks and uncertainties must be addressed, especially with respect to the design and funding security of employer-sponsored as well as public employer pensions.

The rising costs of health care make the financing of Medicare and employer-sponsored retiree health care benefits problematic. If Medicare or employer-financed coverage is reduced, the elderly would need to increase the proportion of their income spent on health care. This could pose a threat to the economic security and well-being of the elderly, particularly to certain vulnerable groups such as the old elderly and women living alone who have dwindling assets and rising health care costs.

Summary of Analysis

The following major observations emerge from the look at 2020 by the Expert Panel:

- From both the perspective of society and the individual, the benefits from future gains in income and wealth are significantly reduced by the growing resources required to support the health care sector.
- The aging of the population, with its implications for the special needs of the elderly, and the increasing burden on the working-age population to support social programs for the elderly cannot be ignored. Our society will accommodate the necessary adjustments if health care costs are maintained at a reasonable level.

-
- The growth of the costs of medical care projected through 2020 is attributable to a continued increase in the intensity of care and medical inflation. The contribution due to the aging of the population is modest. However, demographic changes, especially growth among the very old, may result in nursing home use nearly doubling. Although long-term care is less technologically intense than acute care, intensity for long-term care is also projected to increase.
 - The Expert Panel believes it is critical to focus attention on the potential deleterious effects on the entire economy if the cost of health care continues to rise unabated. The potential adverse effect requires intentional policy intervention in the very near term. The Expert Panel believes it is not tenable for health care to continue to grow along the existing trend line. Even moderate growth in health care will place great demands on society's resources.
 - Many expect that the rising cost of health care, combined with issues pertaining to the number of people facing barriers to needed care in today's health care system, will continuously generate pressure and tension within the political system and that some measure of policy reform will be undertaken in the near term.

Conclusions and Lessons for Today

The Panel's analysis of 2020 underscores the importance of long-range analysis of social policy issues. The Panel believes that the potential command of future resources makes this critical for health care. Most analyses for new policy options cover only a short horizon projection. Even though there are limitations associated with long-range projections, they

provide valuable insight into potential problem areas, the possible magnitude of change that can be expected, the areas of relative growth, and the potential impact on other economic sectors.

Health care reform must be considered in a broad social policy context. Financing policies for both public and private health care must consider the effect of future demographics, income and wealth distributions, and their anticipated impact on economic growth. GNP, by itself, is an insufficient measure of affordability of health care. Other factors that measure the financial burden of health care and social programs on the individual and business must be considered. Developing a systematic approach to measuring the effect of major policy reform and identifying barriers to consensus is a valuable, albeit difficult, pursuit. Tools that further this objective are encouraged. Suggested criteria to assess approaches to reform and a research agenda are included in the report.

The Nation faces serious health care financing problems, particularly in the next century. The issues facing policy makers are not easy to resolve. Reform requires a balance of fairness that can be maintained into the future. The Panel recommends that major policy decisions about the design and financing of health care should be developed not solely in annual budget negotiations, but rather from a long-term perspective that aims to design the best possible health reform program, given the resources that Americans are willing to devote to that purpose.

Further, the Panel concluded that the projected increase in health care expenditures through 2020 is dramatic under all plausible scenarios. The major factor in the rise in acute care costs is not demography. Instead, increases come from the ongoing evolution in technology, in the way that we use health services, and in the structure of our health care delivery and

financing system. Since ongoing trends in these systems will exacerbate future problems, it is important to start significant change in our system as quickly as possible by a health policy that can appropriately contain these cost trends.

The issue of access to health care is of comparable importance to the issues of cost level and cost increases. There are no available projections of the number of uninsured to the year 2020. Having considered the trends of medical costs relative to wages, the size and aging of the population, and developments in the insurance market, the Panel concluded that it is very likely that a projection of the number of uninsured in 2020 would show more uninsured than there are at present. Since the projection gives no reason to expect improvement in access without major government intervention, the problem of access to medical services should be faced as quickly as possible.

Different methods of providing increased access lend themselves to different methods of cost containment, so it is best to consider these two issues simultaneously. Since there are a limited number of approaches to universal (or nearly universal) access, the natural first step in the analysis of health policy is to list currently discussed approaches and contrast their characteristics and impacts. The natural second step would be to compile a list of the many different government actions that can be taken to limit cost increases. Because different cost-containment mechanisms fit with different methods of providing universal access, the third step would be to combine the approaches toward universal access with approaches toward cost containment, generating a matrix of combinations. There was strong interest by the Panel in further development of this approach; however, time did not permit further analysis.

The Nation faces the dual challenge of expanding health care coverage to those who are now inadequately insured and of containing the costs of that care. The Panel's projections indicate that, in the absence of action today, health care will absorb an alarming proportion of the country's resources by the year 2020 and that the number of Americans who are inadequately insured will increase. The Panel wishes to reiterate its sense of urgency about these issues and concludes we must address these challenges now.

INTRODUCTION AND OVERVIEW

The year 2020 is a year most of us can visualize, at least in a demographic context, by projecting forward nearly 30 years. Those of us who represent the "first wave of the baby boom" will be in our seventies, most likely retired, receiving our Social Security checks, and using our Medicare benefits. Our children will be well settled into their career paths, contributing to Medicare and Social Security, paying for private insurance for their families, and saving for their retirement. Our grandchildren will be in school or possibly just starting their careers.

The primary impetus for examining income security and health care issues in the future came as a direct result of merging projections from two technical panels appointed by the Advisory Council on Social Security. The Social Security Technical Panel included in its report projections of the cost of Social Security (Old-Age and Survivors Insurance and Disability Insurance) cash benefits as a share of taxable payroll. The Health Technical Panel made the same projections for the cost of the Medicare program (Hospital Insurance and Supplementary Medical Insurance combined). The projections indicated that in 2020 the cost of Medicare and Social Security together would be roughly equivalent to 25 percent of payroll, compared with 15 percent today.

This seemed startling. It raised a host of questions about the rest of the economy in 2020. What about other health care costs? What was the rest of the economy predicted to do? Will we be able to afford the cost of health care?

To examine these issues the Advisory Council convened the Expert Panel on the Future of Income Security and Health Care Financing. The charge to the Expert Panel was to provide a broad review of the economic and social policy issues that must be addressed in considering the combined financing of the health, income security, and long-term care needs of an aging population. The analysis by the Panel was limited by two important factors: (1) The Panel would assume no significant changes in current policy, and (2) The Panel would build its analysis largely from existing data projections, recognizing that there were insufficient time and resources to do its own projections.

Most members of the Expert Panel were economists and actuaries who had served on the other two technical panels convened by the Advisory Council. The panel also included two experts on the elderly and long-term care. The Panel had its first meeting in January 1991. Early in the process, the Panel agreed that a major part of its analysis would be a macroeconomic view of the economy in 2020 focusing on the gross national product (GNP). The assumptions about the level of GNP in 2020 and growth in the economy were based on the 1991 Trustees Reports on OASDI, HI, and SMI. The health care expenditure projections were provided to the Panel by the Office of the Actuary, HCFA. The Panel developed different economic scenarios of 2020 that varied only to reflect different projections of health care expenditures in 2020. Various assumptions about the level of, and changes in, consumption expenditures (except for health care) were selected by the Panel, and the long-term impact of these assumptions was projected by the Office of the Actuary, Social Security Administration.

This chapter provides a brief overview of the retirement income and health care systems. It also identifies several health care financing reform policies being considered for acute and long-term care. The next chapter presents a

picture of 2020 that provides a broad brush view of future demographics, income and wealth, and health care expenditures. It synthesizes projections made by other sources. The third chapter presents the health spending projections used in this report and provides the analysis, incorporating both social and individual perspectives on 2020. It also expands on the trends in the health care system and discusses some of the uncertainties about health and retirement income systems in 2020. The report concludes with observations, conclusions, and next steps. It includes a discussion of criteria to be considered for social, and particularly health care reform and identifies a research agenda that could produce information and analysis that could aid social policy decision-makers on how policy today affects the future.

Both the retirement income system and the health care delivery and financing system have evolved to include public and private sector involvement. A comparison between providing income security and financing health care and a comparison of income benefits and health benefits for retirement are included in appendix 1.

Retirement Income System

The retirement income system has been compared to a three-legged stool, in which Social Security, employer-provided pensions, and individual savings are considered the three legs holding the stool that represents retirement income security. For some elderly, earnings are an important source of income and may supplement retirement income. For the elderly⁵ with limited income and resources, Supplemental Security Income (SSI) provides a federally guaranteed minimum income that is a critical source of retirement

⁵Except where otherwise noted, elderly is defined as those persons age 65 or older.

income. This section provides a brief overview of each of these five sources of income.

Social Security

The old-age and survivors insurance (OASI) program, enacted in 1935, is available to retired workers and their dependents and to the survivors of insured workers. The disability insurance (DI) program, enacted in 1956, now provides monthly cash benefits to disabled workers under the age of 65 and their dependents. These two programs, OASI and DI, constitute what is traditionally called Social Security. Eligibility for Social Security is based on sufficient employment in jobs that are covered by the Social Security system. Today, about 92 percent of all workers are in jobs that are covered by Social Security.

Social Security is financed through a payroll tax and from income taxes paid on Social Security benefits. Most of the current income received goes to finance current benefits. Any funds collected in excess of benefit payments are credited to the trust fund as reserves, in the form of U.S. Treasury securities. To finance OASDI in 1991 the employer and employee each pay a tax equal to 6.2 percent of the first \$53,400 in earnings (self-employed persons pay 12.4 percent).

During 1991, about 134 million workers contributed to the OASDI program, and in September 1991, 40.4 million persons were receiving monthly benefits under the program. In fiscal year 1991, income into the OASDI trust funds was \$322.6 billion, while the benefit payments plus administrative expenses was \$269.1 billion, for a net increase of \$53.5 billion to the trust funds. At the end of September 1991, the trust funds had \$268.4 billion in assets. Under present policies and demographic projections, the OASDI Trust Funds

combined are projected to grow for 25 years and then begin to decline and ultimately be exhausted in 50 years.

Monthly benefits are based on past covered earnings. The benefit formula is weighted to pay a higher percentage of pre-retirement earnings to those with relatively lower past earnings. In 1991, estimates of total monthly benefits at age 65 as a percentage of earnings in the year prior to retirement ranged from 24 percent for a worker whose entire career was at the maximum wage taxable for Social Security (\$53,400 in 1991) to 58 percent for those whose earnings were equal to 45 percent of the average wage. For those with average earnings throughout their working career, the replacement rate was 43 percent. The progressive nature of the Social Security system is also shown in analyses of the relationship of benefits to taxes.⁶ Benefit amounts are automatically increased with increases in the cost of living as measured by the Consumer Price Index (CPI). A cost of living adjustment is provided in any year in which there is a 0.1 percent or more increase in the CPI.

Normal retirement age, or the earliest age at which benefits are not reduced, is age 65. Retirement benefits can be obtained as early as age 62 but at a reduced rate. For persons reaching age 62 in 2000, the normal retirement

⁶ Welch, Finnis. "Progressivity and Social Security under Present Law; Comparison of Taxes to Retired Worker Benefits," Unicon Research Corporation, Santa Monica, CA, May 1991. The author analyzes the present value of retired-worker benefits in relation to OASI taxes (paid by both employees and employers) for men and women with illustrative work histories that reflect typical earnings patterns of men and women. For men retiring at age 65, the relationship of benefits to taxes ranges from 2.31 for those whose earnings are at the first bend point in the Social Security benefit formula, to 1.07 for those at the second bend point, to 0.72 for those who earn the maximum amount taxed and counted toward Social Security benefits. For women, comparable relationships of benefits to taxes were 2.79, 1.29, and 0.87, respectively. The analysis used 1990 Trustees' assumptions that real wages grow by 1.3 percent per year and the real interest rate is 2.0 percent. The ratios of benefits to taxes by earnings levels illustrate the progressive nature of the benefit formula for retired workers. They do not reflect the additional benefits paid to spouses or survivors of retired workers.

age will be increased by 2 months to age 65 and 2 months. In each succeeding year, the normal retirement age will be increased by 2 months until it is age 66 for those turning age 62 in 2005. The normal retirement age will remain at age 66 until 2017, when for those turning age 62, normal retirement age will increase by 2 months each year until it reaches 67 for those who turn 62 in 2022. Benefits will still be available at age 62 but, because of the increased normal age, the early retirement reductions will be larger. Today, retired-worker benefits claimed at age 62 are reduced by 20 percent. When the retirement age is 66, the age 62 reduction will be 25 percent. When the normal retirement age is 67, benefits claimed at age 62 will be reduced by 30 percent.

As of September 1991, the average monthly benefit was \$605 for retired workers and \$561 for widows and widowers. For disabled workers, the average monthly benefit was \$587 in September 1991. Data from 1988 suggests that over 92 percent of all elderly families received Social Security benefits. The median Social Security income, among all elderly families receiving benefits, was about \$7,600 a year. (See table 1.1.) Among all elderly family units, Social Security represented 41 percent of total income.

Employer-Sponsored Pensions

Pensions are an important supplement to Social Security for many retirees. Pension plans vary tremendously. All tax-qualified private pensions are subject to the Employee Retirement Income Security Act (ERISA) of 1974; pensions provided by Federal, State, or local governments are not. Regardless of plan sponsor (public employer or private employer) there are two basic types of pension plans: defined contribution and defined benefit.

Table 1.1
Income of Elderly Family Units, 1988

Source of Income	Percentage of Elderly Receiving (Percent)	Share of Aggregate Income (Percent)	<u>For Those Receiving</u>	
			Mean Amount	Median Amount
Total Income	100	100	\$18,230	\$11,770
Social Security	92	41	8,110	7,600
Employer Pensions	40	17	8,040	4,830
Public	14	8	10,100	*
Private	28	10	6,540	*
Asset Income	73	24	5,880	880
Earnings	19	17	15,740	11,940
Supplemental Security Income	9	1	2,380	2,281

*Not tabulated separately

SOURCE: Simulations by Lewin/ICF from the Projected Retirement Income Simulation Mode (PRISM)

In defined benefit plans, the employer agrees to provide the employee with a specific benefit amount at retirement, based on a specific formula. Most formulas are based on the worker's years of service and salary. The employer must maintain a pension fund based on actuarial principles using

the projected number of beneficiaries and their projected benefits. That is, the employer contributes to the fund as expected retirement benefits accrue to current workers. The actual pension amount depends on the length of time the worker remains with the firm, the wage history of the worker, and the formula determining benefits.

In defined contribution plans, the employer specifies the annual contribution to the employee's account, usually a fixed percentage of the employee's salary. Here, too, the amount of the benefit varies by length of service and average salary, but the nature of the promise is not a specific formula based on the earnings history. The actual pension amount depends on how much is in the account when the employee retires. In this case the investment risk of the account is assumed by the employee. In the case of a defined benefit plan, the employer's promise does not depend on the investment outcome of the pension fund.

While a majority of pension plans are of the defined contribution type, more employees are participating in defined benefit plans. Many employers offer both, using the defined contribution plan to supplement the defined benefit plan. In 1987 there were 872,000 private employer pension plans, of which 73 percent were defined contribution plans and 26 percent were defined benefit plans.⁷ As of 1988, 46 percent of all full-time private sector employees and 75 percent of all government employees participated in a pension plan. The proportion of all workers covered (including part-time

⁷Turner, John A.; Beller, Daniel J. "Trends in Pensions", U.S. Department of Labor, Pension and Welfare Benefits Administration, 1989.

workers) was 44 percent, with 29 percent holding a vested right to a pension in 1988.⁸

As of December 1989, employer-sponsored pension plans had reached an estimated \$2.8 trillion in value. Nearly 66 percent of these funds were from private employers.⁹ Of the private employer pension funds, more than one-third (36 percent) was invested in corporate equity, another third was held in insured reserves, and the remaining third was held in bonds, cash, and other assets. Overall, pension funds hold about 9 percent of total financial assets held in the United States.

Both the number of employers offering pension plans and the number of workers covered by a pension plan expanded dramatically during the late 1950s and early 1960s. Between 1950 and 1965, the number of plans increased eightfold and the number of covered workers increased 122 percent.¹⁰ As both the number of employees covered and the size of pension fund assets grew, so did the concern over pension rights for employees, the fear of plan termination prior to retirement, and the investment policies of the plan sponsors.

The Employee Retirement Income Security Act of 1974 (ERISA) firmly established employee rights by enacting minimum standards for participation, vesting, and funding of pension plans. The Pension Benefit Guaranty Corporation was created to insure benefits of employees in defined benefit

⁸Woods, John R. "Employer-Sponsored Pensions: Receipt, Coverage and Vesting", unpublished data in *Briefing for the Advisory Council on Social Security*, Office of Research and Statistics, Social Security Administration, September 1990.

⁹Piacenti, Joseph S. *EBRI Data Book on Employee Benefits*, Employee Benefit Research Institute, Washington DC, 1990.

¹⁰Turner and Beller, *op. cit.*

plans against termination with inadequate funding. ERISA also expanded the contribution amounts for Keogh plans available to the self-employed and created tax-deferred individual retirement accounts (IRAs) for employees not covered by a qualified private pension or government pension plan.

Since 1974 there have been significant changes in pension laws. The Revenue Act of 1978, for example, encouraged the development of new benefit plans under Section 401(k) of the tax code; it enabled the creation of "cafeteria" plans; and it created Simplified Employee Pension plans for small firms. The Economic Recovery Tax Act of 1981 extended IRAs to all workers and raised the annual deduction permitted to \$2,000 per employee; it also raised deduction limits on certain types of Keogh plans to \$15,000. The Retirement Equity Act of 1984 lowered the minimum age at which participation must start from 25 to 21 years; expanded break-in-service rules for maternity and paternity leave; required written consent from the spouse before joint-and-survivor coverage under pension plans could be waived; and mandated the payment of a survivor annuity for vested participants who died before retirement.

The Tax Reform Act of 1986 mandated more rapid vesting schedules (in the most common form, reducing from ten to five the required number of years of participation); limited the full deduction for IRAs to persons not participating in employer-maintained retirement plans or whose income fell below certain levels; placed a cap on the amount individuals could contribute, tax-deferred, to 401(k) plans; added a 10-percent surtax on pre-retirement lump sum distributions that were not subsequently invested in an IRA or qualified retirement plan; and limited the extent to which pension benefits could be "integrated" with (or offset by) Social Security benefits.

In 1988 about 40 percent of all elderly families received income from either a public employer or private employer pension plan. (See table 1.1.) More than 21 percent received a defined benefit private pension, 11 percent received income from a private defined contribution plan, and 14 percent received income from a public employer pension plan (some received from more than one source). Among those receiving a public or a private pension, the median benefit amount was \$4,830 per year. Overall, pension income represented about 17 percent of aggregate income of the elderly.

Individual Savings

Individual savings for retirement represent the third leg of the retirement stool among the elderly. About 73 percent of all elderly families have income from assets. For those with asset income, the median amount was \$880. In aggregate, as a share of the elderly's income, about 24 percent is derived from individual efforts to save.

Earnings Among the Elderly

In 1988, 19 percent of all elderly families had earnings from employment. The median for those with earnings was \$11,940 in 1988. Overall, this represented about 17 percent of aggregate income among the elderly. The relative importance of earnings as a source of income declines by age, although in all age groups, married couples receive a substantially larger share of their income from earnings.

Supplemental Security Income

The Supplemental Security Income (SSI) program was created in 1972 to provide assistance to aged, blind, or disabled persons with limited income

and assets. To qualify for Federal benefits a person must be age 65 or older or blind or disabled and have countable assets of less than \$2,000 for an individual or \$3,000 for a couple, and, for those receiving only Social Security, have countable income less than \$5,304 for an individual or \$7,836 for a couple. The income limits are nearly double for those receiving only wage income. Many States provide supplements to the Federal SSI benefits.

In September 1991, about 5.0 million persons received SSI; nearly 1.5 million because of age; 3.5 million because of disability; and nearly 85,000 people because of blindness. The average monthly amount received was \$318. Among all elderly families receiving SSI, the average annual benefit was \$2,300 in 1988, which represented 1.2 percent of the aggregate income of the elderly.

In all but 13 States, SSI eligibility confers Medicaid eligibility. In 13 States, Medicaid eligibility is more restrictive than SSI eligibility. In all but two States, SSI beneficiaries may be eligible for food stamps. In California and Wisconsin, food stamp benefits are converted to cash and included in the State supplementary payments to SSI recipients.

Health Care System

The health care system in the United States has contributed substantially to remarkable improvements in the length and quality of life in this country. The mortality rate in the United States was about cut in half between 1900 and 1977, from 17 deaths per 1,000 to 9 deaths per 1,000. Life expectancy at birth, which was a little under 50 years in 1900, is now about 74 for men and about 79 for women. Health care has also freed people from pain, restored their mobility, and in other ways improved the quality of their lives.

While factors outside the health care system have contributed to these improvements, a substantial part of the credit goes to the medical research, physician and hospital care, drugs, and new equipment used to diagnose and treat diseases.

Although our health care system has achieved noteworthy successes, it also has serious problems. First, about one of seven Americans has no health insurance. Second, expenditures on care have risen very sharply over the past three decades. Health expenditure increases have averaged over 11 percent per year over the past 30 years, outpacing the growth of the economy by nearly 4 percentage points a year. Health expenditures per capita and as a percent of GNP exceed those of all other countries.

Health care expenditures account for 12.2 percent of our gross national product today, roughly double the corresponding proportion three decades ago. Health care outlays, which totalled about \$666.2 billion in 1990, are expected (in constant dollars) at least to more than double, and possibly to triple, by the year 2000 if past trends continue.

Furthermore, although the U.S. health care system is generally marked by high quality, there is mounting evidence of a considerable amount of unnecessary and inappropriate care. While some doctors, hospitals, and other service providers are better than others at getting patients well and controlling costs, the incentives embedded in our current health care system often do not reward good performance or induce poor performers to change their practice patterns (see appendix 2, *Medical Care and Insurance in a Market Economy*, for a discussion of how the medical care system is different from other market segments).

There are also some basic imbalances in our health care system. Insurance coverage for acute care, such as physician consultations, diagnostic testing, and surgery, is widespread, even though gaps persist. Yet, there is very little insurance—public or private—for long-term care, which is a growing problem for an aging society. In addition, there is insufficient emphasis on prevention. Timely early interventions in the form of immunizations, prenatal care, and periodic screening are often neglected, leading to avoidable adverse health outcomes and higher costs at a later time.

Thus, the challenge facing the U.S. health care system in the 1990s is to correct the system's obvious and troubling flaws while preserving its best features and building on its accomplishments.

The Delivery of Health Care in the United States

Health care in the United States is delivered primarily by nearly 600,000 physicians, about 1.7 million registered nurses, about 7,000 hospitals, some 17,000 nursing homes, over 9,000 residential facilities providing long-term care, and about 11,000 home health agencies. The delivery system is pluralistic and diversified, with a heavy emphasis on the private practice of medicine under a variety of different organizational forms.

The organization of physician practices illustrates this diversity. The vast majority of physicians are in private practice on a "for profit" basis. While some physicians practice on their own, the prevalence of these "solo practitioners" is receding. The majority of physicians are now in private group practices; many of which are in multispecialty groups. A substantial number of physicians practice in Health Maintenance Organizations (HMOs). The arrangements for physicians in HMOs vary, with some in a "Staff

Model" and others in more independent practices. Many physicians are affiliating with the growing number of preferred provider organizations, which are a kind of hybrid combining some of the features of fee-for-service medicine with some of the features of prepaid groups.

A physician is often a patient's preliminary contact with the health care system and acts as a key decision maker in whether patients obtain secondary care. As such, physicians have a major influence on how hospital and nursing home resources are allocated.

As a result of educational subsidies and the immigration of foreign-trained physicians, physician supply has grown much faster than the population over the last 20 years. It has risen from about 180 per 100,000 population in 1977 to nearly 230 per 100,000 population in 1988. Estimates of physician supply for the year 2000 range from 643,000 to 709,000. Some of the developed countries (such as United Germany and Sweden) have a larger physician supply per capita, while others, such as Japan and the United Kingdom, have a supply much smaller than that of the United States.

Increases in the supply of physicians have not been uniform across specialties and geographic areas. The supply of physicians in many subspecialties such as cardiology and neurology grew faster than the supply of primary care doctors such as family practitioners and pediatricians. Rural areas continue to have proportionately fewer physicians than urban areas.

Both hospitals and nursing homes are characterized by three different organizational forms—private, nonprofit, public, and proprietary or investor-owned. Among hospitals, the private, nonprofit form is the most prevalent. For example, among community hospitals (which represent over four-fifths of the total), 60 percent are nongovernmental, nonprofit organizations. About

27 percent are controlled by State and local governments and about 15 percent are for-profit, investor-owned facilities.

In contrast, most of the nursing home industry is proprietary; 72 percent of the nursing homes and 85 percent of residential care facilities were for-profit in 1985. The rest were owned by nonprofit organizations or units of government.

It is important to note that over three-quarters of the people who need long-term care reside not in nursing homes, but rather in their homes or in the community. Since many of the needed services, such as help with activities of daily living (toileting, eating) or with instrumental activities of daily living (using the telephone), do not require technical skills, these services can be provided informally (by family or friends) or formally (by purchasing the services of an aid or homemaker). Most of the long-term care services are provided informally. For example, about three-quarters of severely disabled elders receiving long-term care at home or in the community in 1989 relied solely on family members or other unpaid help. The overwhelming majority of this care is provided by women.

Health Care Financing System

The U.S. health care system is financed by a combination of employer-sponsored group health insurance; government programs covering the elderly, disabled, and the poor; and out-of-pocket outlays. The extent and role of employer-sponsored health insurance in the United States are unique to the United States. In other industrial countries, a combination of income and payroll taxes support a national health plan. Employers may supplement the basic insurance coverage provided by governments, as in Canada, and the payroll taxes that firms and employees pay can be the dominant financing

arrangement, as in Germany. But employers' role in sponsoring, administering, and managing the cost of health insurance is a feature that distinguishes the U.S. health care system from most others.

It is important to note that government tax policy has encouraged the spread of employer-sponsored health insurance and has provided financial incentives that make such insurance more comprehensive. The ability of employees to exclude, without limit, the contributions of their employers to health insurance has encouraged workers to take proportionately more of their total compensation in the form of employer-paid health coverage.

Laws have been established by many States that require insurance offered in that State to include mandated benefits. The tendency has also contributed to more comprehensive coverage. Employers who self-insure are governed by the ERISA, which supersedes State insurance law and thus can avoid the mandatory benefit requirements.

Most firms offer health insurance to their employees, particularly large and medium-size firms. In 1989, 92 percent of all full-time employees in medium and large firms had medical benefits that were financed in whole, or in part, by their employers.

Nevertheless, about 14 percent of the U.S. population, or 34.6 million people, were without any source of health insurance during 1990. About 80 percent of the uninsured are workers or the dependents of workers. About 30 percent of the uninsured live in poverty, and the proportion more than doubles when counting the number of uninsured living in households with incomes below 200 percent of the poverty level.

The two largest government programs financing health care are Medicare and Medicaid. Medicare finances largely acute care services for the elderly and disabled. The program is financed by payroll taxes, general revenues, and premiums paid by beneficiaries. Part A of Medicare primarily covers hospital care, and is mostly financed by the payroll tax on current workers and their employers (each pay 1.45 percent of covered wages up to \$125,000). During 1990, Part A of Medicare covered about 30 million elderly and 3 million disabled people at a cost of \$67 billion. The Part A or Hospital Insurance (HI) trust fund is projected to be exhausted in 2005, based on intermediate assumptions. General revenue and premiums are the sources of financing for Part B of Medicare, which covers physician and other noninstitutional services.

The Medicaid program provides coverage for the Nation's poorest and most vulnerable citizens. In 1990, 45 percent of the poor were covered by Medicaid. In 1989, there were 23.5 million Medicaid recipients. The aged and disabled accounted for 28 percent of these recipients but 73 percent of total Medicaid payments.

Medicaid is financed jointly by State and Federal contributions based on a formula that determines a matching rate from the Federal Government.

There are also a variety of public health programs financed by Federal, State, and local governments.

Today's Debate on Health Care Reform

Two issues dominate today's discussion by policy-makers of health care reform: the escalating cost of health care despite government and private

sector initiatives to slow the rate of growth of health care expenditures, and the concern over the number of people who lack access to obtaining needed health care. These two issues are inextricably related: as costs increase, more people are unable to afford health care insurance or the cost of health care. Most analysts recognize the conundrum facing policy-makers today. Health care costs are rising to what many believe are unacceptable levels and have not responded to cost-containment measures undertaken this far. Yet, many also believe that implementing an approach to health care reform that substantially expands insurance coverage to insure that all Americans will have access to needed care will add additional costs to the health care system, both in the near term and in the future.

A wide range of responses to these issues have been proposed, some of which are briefly summarized below. The summaries of the proposals are intended to capture the essence of reform approaches under discussion today and are not intended to represent a specific proposal.¹¹ Aspects of some approaches are interchangeable or compatible with others. Each embodies a different combination of features and incentives to meet the twin objectives of increasing access to necessary health care and controlling costs. As can be seen, wide variation exists in approaches to reform including: voluntary vs. mandatory changes; market-based vs. regulatory approaches; direct care vs. insurance coverage; and various hybrids. As of this writing, there is no consensus among consumers, insurers, employers, policy-makers, and other interested parties as to the most appropriate approach to America's health care reform.

¹¹There are numerous reports, publications, and periodicals available to the reader that present detailed discussion of options and analyze health care policy reform proposals under consideration today. For example, refer to two volume issue of JAMA, May 15, 1991, and reports put out by the Congressional Research Service, Congressional Budget Office, and the General Accounting Office.

The proposals produce a range of effects on reducing barriers to care, controlling costs, and distributing the cost of financing the revised system. Some promote comprehensive approaches while others are directed at specific weaknesses in the system. The Panel believes it is important for policy-makers in their deliberations to understand the long-range implications of any proposed reform, in order for a change to be enacted that will beneficially affect the future. The implications can be measured in part by access to care, cost of care, and quality of the care provided. But there are other implications that are important to consider, including how the financing burden is distributed, the effects on other sectors of the economy, and the unintended effects of reform within the system itself. The Panel wished to consider the long-range effects of a variety of proposals but found that existing criteria, evaluation methodologies, and detailed data necessary for such analysis were inadequate or unavailable. (The last chapter of this report includes a discussion of criteria and research that might assist in such analysis.)

Examples of Acute Care Reform Proposals

Improve Direct Care System. Public resources would be channeled into establishing or improving direct care sources, especially for underserved demographic groups (such as children) or geographic areas. Federally subsidized school-based clinics and community-based centers are envisioned. Individuals would contribute to the cost of the care based on income. Funding is expected to be derived from the sources that would normally reimburse for these services, e.g., Medicaid and block grant programs. Such an initiative could complement other reform proposals.

Voluntary Small Employer Market Reform. Reform of the private insurance market would include such features as reduced variation in

premium amounts charged to employers, limiting the potential of insurers to terminate coverage, and limiting preexisting condition exclusions of insurers. Variations in rates of premium increases may be controlled. Employers, especially those not offering insurance, would have incentives to voluntarily participate because of the market reforms. Some form of risk pooling and/or reinsurance would be established to protect insurers from unreasonable risk. Provider reimbursement innovations would be encouraged among participating insurers. Improved tax breaks are proposed for self-employed and "vulnerable" small business. No significant structural change would be anticipated in the private insurance market and the existing delivery system.

Mandatory Employer-Provided Coverage. Under this plan, often referred to as "Play or Pay," employers would be required to either arrange for insurance for their employees and dependents (Play) or contribute, generally through a payroll tax, to a public plan (Pay). If the employer paid the tax, the employee would be enrolled in the public plan. For both the public and employer plans, a basic comprehensive benefit package or its actuarial equivalent would be proscribed. Limits on out-of-pocket expenditures would be set and scaled to reflect income. Those outside the labor market or temporarily unemployed would be enrolled in the public plan. The delivery system would remain unchanged.

Mandated Employer Benefits. A variation of employer mandates would require all employers to insure all full-time workers and their families and some part-time workers. Employers would be required to pay 80 percent of a specified comprehensive benefit package. Public programs would be expanded. Medicaid would cover all persons living below the poverty level, regardless of other eligibility requirements, and Medicare would include a catastrophic protection. Tax deductions would be allowed for certain small

and emerging businesses. For those who remain uninsured, reform would create provisions to make private insurance premiums affordable.

Public Sponsored Managed Competition with 80/20 Split and Coinsurance—Mandatory Employer Participation. A public sponsor would contract with private sector health care financing and delivery plans and offer enrollment to all uninsured individuals. Most enrollees would pay 20 percent of the cost, with 80 percent subsidized by the government. Poor and low-income individuals would either be completely subsidized or pay based on a sliding income scale. Employers would be required to cover all full-time workers up to at least 80 percent of the cost of an average plan. This amount would be tax free. Employer contributions above this amount would be taxable. If employers use health plans that did not meet Federal standards, a payroll tax would be imposed.

Compulsory Individual Insurance—Tax Credit. Each individual would be required to purchase insurance to a minimum benefit level. The minimum required coverage would be catastrophic coverage with limits on out-of-pocket expenditures; the limit would be low or zero for low-income families and would offset the cost of insurance and out-of-pocket payments. These credits would replace current tax subsidies to employment-related group insurance, which would be eliminated or capped. Insurance in excess of the required minimum could be purchased but would not cause the tax credit to increase. Individuals whose income fell below a certain level would obtain comprehensive coverage at no cost. The income tax system and the option of purchasing coverage from contracted fallback insurer would guarantee that all would obtain the required coverage.

Universal Catastrophic Coverage. All individuals would be responsible for medical expenses up to a specified percentage of their income. Expenses

beyond a scaled, catastrophic limit would be paid by a public reinsurance system. Insurance plans would be "certified" by the government. A plan would be certified if it does not impose waiting periods and preexisting conditions, has an annual open enrollment, and provides basic comprehensive coverage equivalent to an established amount. Tax breaks would only be available to employers and individuals who use certified plans. In addition, tax incentives would be offered to encourage employers to maintain their current level of coverage. Employers would be required to contribute at least 50 percent of the cost of the minimum benefit for certified plans. Stop loss protection would be offered to Medicare and Medicaid beneficiaries (for expenses related to covered services) as well as others not covered by qualified plans.

Compulsory Group Insurance. A quasi-public organization, labelled for these discussions HealthFed, would be established to administer the group insurance system. The system would be modeled on the principles of the Federal National Mortgage Association. Each individual or family would be assigned by the HealthFed to a group for insurance purposes based on location. Group size would vary based on geographic characteristics, but, essentially, most localities would have multiple groups of sufficient size to minimize the risk of biased selection. Insurers would compete for the opportunity to insure the group. Insurers would offer a variety of delivery options including HMOs. Competition could either be on the basis of best price or scope of benefits for a given price. The HealthFed, acting as a broker, would collect taxes (premiums) and disburse them to insurers, as appropriate. The quasi-public organization could also oversee quality and perform a cost-containment function. The insurer would specify the nature of the delivery system.

Government-Sponsored, Single-Payer National Health Insurance. All individuals would be eligible for a basic comprehensive benefit package, regardless of income or health status. Insurance decisions, such as the scope of benefits and major financing and administrative policies, would be decided nationally and administered by a public agency. The program may be actually administered through smaller geo-political units. Income taxes would finance the majority of the expense of the system. Individuals would face limited out-of-pocket expenses and could purchase private insurance to cover services not included in the benefit package. Individuals could receive care from the provider of his or her choice, i.e., the delivery system would not change.

Examples of Long-Term Care Reform Options

Although reform of the acute care sector is dominating the debate, reform of the long-term care (LTC) system may eventually demand equal attention. The two main issues concerning LTC are how to finance affordable care and how to make that care appropriate and desirable to those who need it and to do this in a way that contains costs. Most of the attention today is devoted to the financing issue, but any plans for 2020 must recognize that LTC will look considerably different from what it is today. This forecast is especially germane because the current proposals are based on a sharp distinction between nursing home and home care. The trend, already begun, suggests that the nursing home as we know it today will change greatly. It will become a repository for two types of patients: those recovering from acute illnesses after ever shorter and more intensive hospital stays and those who require persistent intensive chronic care (e.g., those in chronic vegetative

states). A summary of options¹² involving an expanded government role is presented below:

Front-End Nursing Home Coverage. Medicare would be expanded to cover front-end nursing home care. Such coverage pays for the initial portion of a nursing home stay (usually 6 months to a year). This approach covers more people (because the median nursing home stay, even cumulatively counted, is well under 6 months), but covers the smaller part of the total nursing home bill (coverage for up to 6 months may result in payments ranging from \$5,000 to \$15,000).

Back-End Nursing Home Coverage. Medicare would be expanded to cover back-end nursing care. Such coverage would not begin to pay for nursing home care until some period of stay had elapsed (perhaps 1 to 2 years). This approach covers the bulk of the total nursing home expenses but is a benefit for only the smaller proportion of persons with long stays. In theory, private insurance could be obtained to cover the first portion of the stay; this insurance would be more affordable than current LTC insurance because the risk is limited. Projections suggest that the purchase of such policies would be limited.

Expanded Home Care Coverage. Public benefits would provide expanded home care coverage. Such coverage would allow greater use of home care as an alternative to nursing homes. Coverage would be more liberal than for nursing home care but eligibility requirements would presumably be the same. Given the disdain of many people for nursing home use, more persons would opt for these services.

¹²Refer to "An Analysis of Selected Options for Financing Long Term Care" issued by the 1991 Advisory Council on Social Security for a more detailed review of most of these options.

Private LTC insurance. The government could provide tax subsidies to encourage private LTC insurance. Such insurance is achieving slow but steady growth. Various changes in tax treatment might make it more attractive for some buyers, but unless it is offered as a fringe benefit (either in addition to or instead of current benefits), its potential growth among working class persons (for whom the premium costs would be low) is limited. Marketing such insurance to those already at risk by virtue of age makes the premium costs high (in some cases, almost as high as the services themselves). Most policies now sold provide for a cap on the value of services provided once a person is eligible by virtue of dependencies defined usually by the activities for daily living. Given the availability of Medicaid coverage, private LTC insurance offers two benefits: coverage of a higher level of service than Medicaid would provide (e.g., more nursing, better accommodations); and protection of assets against the spend-down requirements for Medicaid eligibility.

Publicly Subsidized LTC Insurance. Such insurance has been proposed in at least two forms. In one case, using private insurance would result in credits toward spend-down provisions for Medicaid eligibility. For example, for every dollar of benefit received from private coverage, the recipient's eligibility level would be increased by one dollar. Another version would use State funds (perhaps Medicaid funds) to purchase LTC insurance for Medicaid recipients (or those at risk of becoming Medicaid recipients); this might be done on a sliding scale with a subsidy for purchasing LTC insurance determined by income for those not categorically eligible.

Capitation of LTC Services. Several proposals have been made to provide fixed amounts of money to agencies responsible for the LTC populations in geo-political units (e.g., counties). These agencies (which could be either public or private corporations) would be responsible for providing LTC to

those eligible for services. Wide latitude would be given to permit new combinations of service. Accountability would be based on access and outcomes of care. One issue that will pose a problem under such a model is defining the boundary between acute care and LTC. The current efforts to cost-shift (especially between Medicare and Medicaid) would be exacerbated if one or both portions of the care were separately capitated.

A review of these proposals is illustrative of the diverse approaches being advocated by those interested in addressing the problems of the health care system through reform. As can be seen above, a wide variety of perspectives exists on how to address increasing costs while improving access.

PICTURE OF 2020

The Expert Panel examined projections of major demographic and economic factors that will influence the demands placed on the health care and income security systems in 2020 and the subsequent demands of these systems on the individual and society. These factors include:

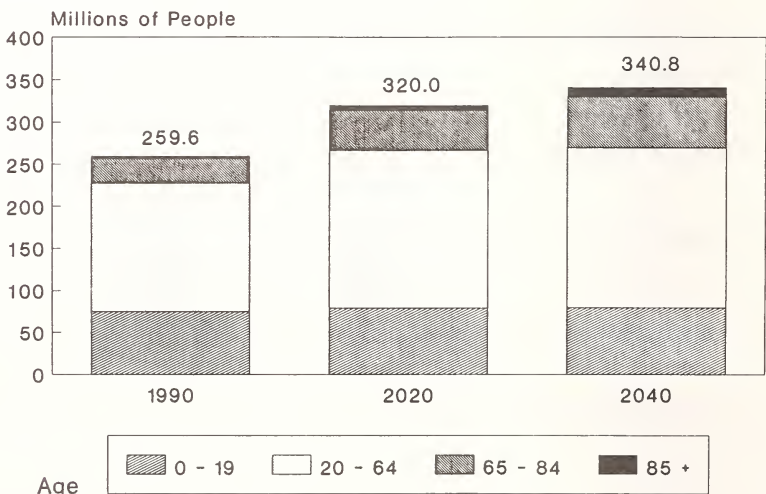
- the aging of the population and a shift in the dependency ratio of retirees to workers;
- the effects of immigration on population size;
- changes in the racial and ethnic composition of the elderly and nonelderly populations;
- changes in marital status, living arrangements, and family composition;
- changes in life expectancy and disability;
- labor force participation trends;
- changes in the financial status of the elderly population;
- growth in health care expenditures for the elderly and non-elderly; and
- growth of Medicare and Social Security as shares of GNP and taxable payroll.

This section portrays a picture of 2020 in relation to today by reviewing trends in these factors. Some projections, particularly of population trends, are also shown for 2040 to indicate further changes that Americans of 2020 might anticipate in their future.

Population Growth and Aging of the Population

According to Social Security Administration estimates based on the intermediate assumptions used in the 1991 Trustees' Report, the total population is expected to grow 23 percent by the year 2020, from 260 million in 1990 to 320 million in 2020; by 2040, the population is projected to reach 341 million. (See figure 1.)

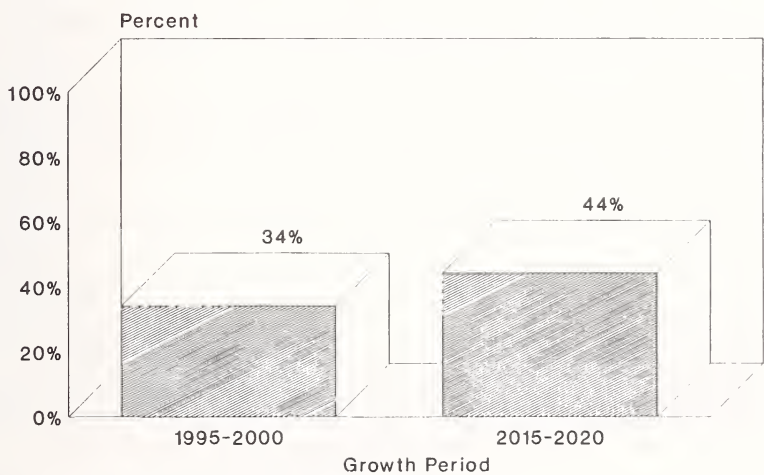
Figure 1
Projections of the Population, 1990-2040



Source: SSA, OAct, Population projections by age, 1991.

A major factor in this population growth is net immigration, which according to intermediate assumptions used in the 1991 Trustees' Report is assumed to be 750,000 persons per year beginning in 1992 when new legislation becomes effective. This assumed level of net immigration will play an increasing role, accounting for a little over a third of the increase in the population between 1995 and 2000 and about 44 percent of the population growth between 2015 and 2020. (See figure 2.)

Figure 2
Assumed Net Immigration as a Proportion
of Projected Population Growth

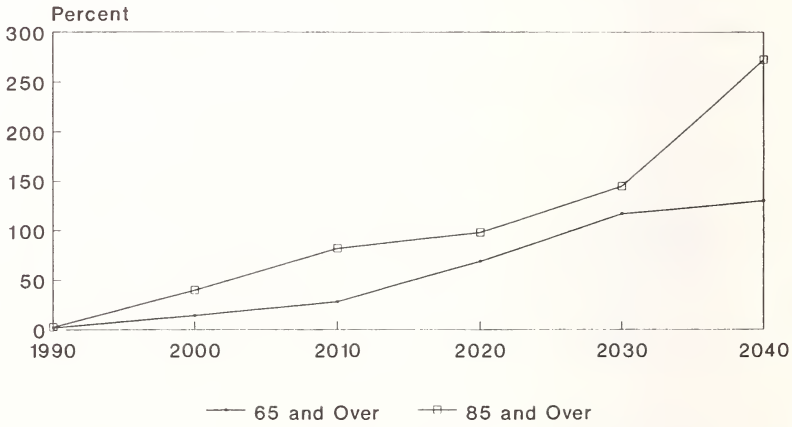


Source: 1991 OASDI Trustees Report.

The aging of the population is expected to exert pressure on the U.S. health care and pension systems over the next 30 years. That aging is attributed primarily to the movement of the baby boom generation into their retirement years between 2010 and 2030. Improvements in life expectancies will also

contribute to the aging of the population. The population aged 65 and over is expected to increase from 32 million in 1990 to 53 million in 2020, or from 12 percent to 16 percent of the total population.¹³ (See figure 1.) By 2040, the population aged 65 and older will reach 72 million, representing over one-fifth of the total population. The oldest old—those 85 years and older—are projected to increase more rapidly than the elderly as a whole, increasing by nearly 100 percent, from 3.2 million in 1990 to 6.2 million in 2020 and then growing more rapidly after 2030. (See figure 3.)

Figure 3
Projected Percentage Change in the Size
of the Aged Population, from 1989 level

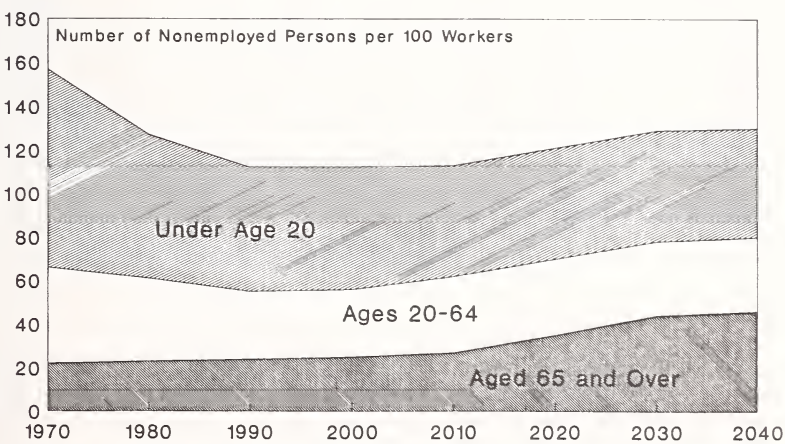


Source: SSA, OAct, Population projections by age, 1991.

¹³ Population size among the elderly can be predicted with some certainty because it depends largely on mortality rates. This is more predictable than births, which reflect the decisions of families of child-bearing ages.

This growth in the oldest old suggests that there will be increasing resource requirements placed on the U.S. health care system, particularly the long-term care system, as well as the retirement income system during the next three decades and thereafter. The shifting age structure of the U.S. population will affect the ratio of nonworkers to workers. (See figure 4.) Between 1990 and 2020, the number of persons not in the labor force per 100 employed persons is projected to increase from 112 to 121. These trends vary, however, for the nonworkers under age 20 and those aged 65 or older. Projections for the next three decades indicate that there will be a continued decline in the number of children per 100 workers, from 91 in 1970 to 51 in 2020. In contrast, the number of nonworking elderly per 100 employed persons is

Figure 4
Projection of the Number of Nonemployed
Persons per 100 Workers, 1970-2040

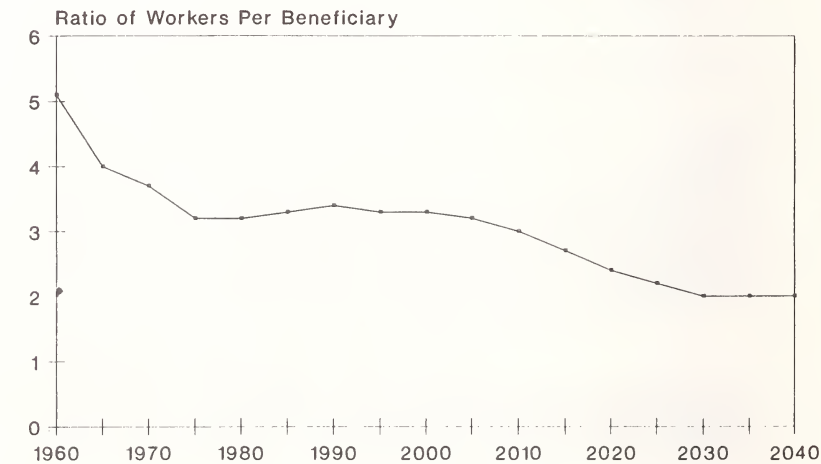


Source: SSA, OAct, Unpublished
Data, 1991.

projected to increase from 22 in 1970 to 35 in 2020. In interpreting these changes in the dependency ratios, it is important to recognize that the elderly and children have different resource requirements. Elderly health care expenditures, for example, will continue to account for a disproportionate share of all health care spending in the U.S.

Related to measures of dependency ratios is the often used OASDI "support ratio," which is the ratio of covered workers to OASDI beneficiaries. (See figure 5.) This ratio is expected to decline from 3.4 workers per beneficiary in 1990 to 2.4 in 2020.

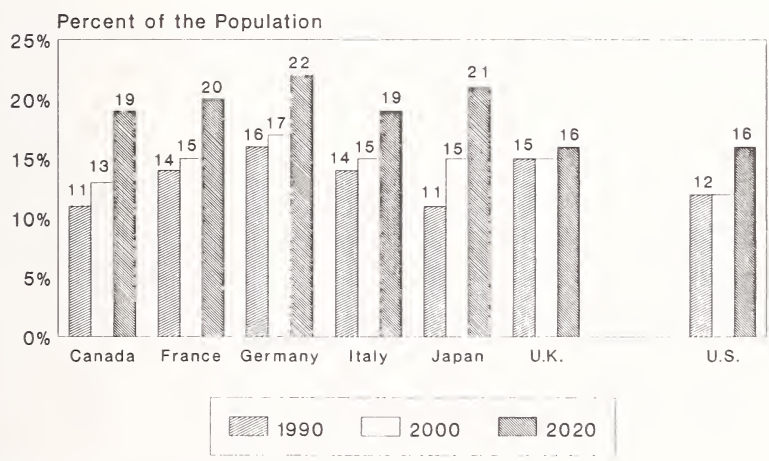
Figure 5
Covered Workers per OASDI Beneficiary
1960-2040



Source: 1991 OASDI Trustees Report.

The United States is not alone in facing the consequences of an aging population. Other industrialized nations will also have a growing share of their populations aged 65 or older. In fact, by the end of this decade, the elderly will be as large a share of the German and Japanese populations as is projected for the United States by 2020. When the elderly account for 16 percent of the U.S. population, an even larger proportion of the population will be age 65 or older in Germany, Japan, Canada, France, and Italy (See figure 6).

Figure 6
International Comparisons
Projections of the Population Over 65

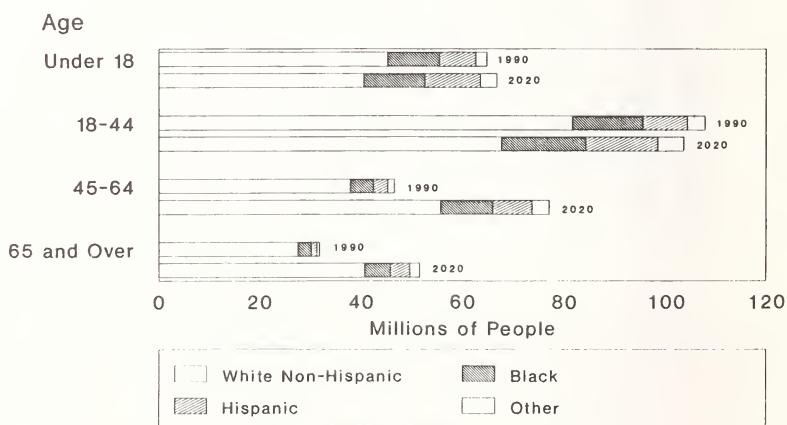


Source: OECD, *Ageing Populations*, Paris, 1988.

Racial and Ethnic Composition

The racial and ethnic composition of the population in 2020 will be much different than it is today. The proportion of the U.S. population that is white non-Hispanic is projected to decrease from 77 percent in 1990 to 69 percent in 2020. This decrease applies to all age groups, although the aged 65 and over population is projected to experience a slightly smaller decline than the other age groups. (See figure 7.) These projections also indicate that, as in 1990, the younger age groups in 2020 will be more nonwhite and Hispanic than those aged 65 and over. Among the minorities, the Hispanic population is projected to experience the greatest growth, increasing from only 8 percent of the U.S. population in 1990 to 12 percent in 2020.

Figure 7
Ethnic Composition of the Population
1990 and 2020

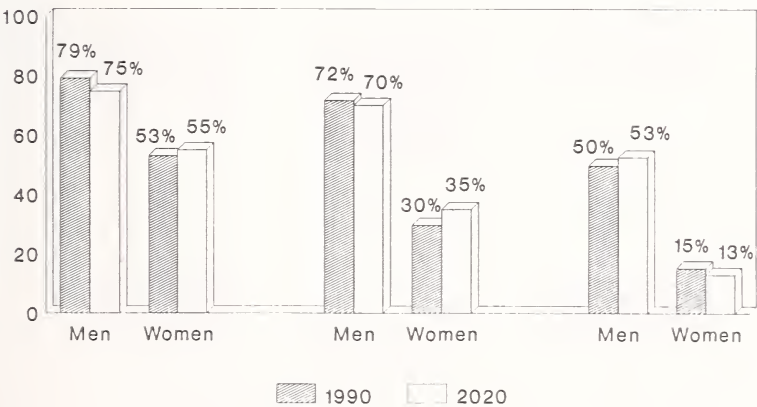


Source: Bureau of the Census, Current Population Reports, Series P-25, Number 995, November 1986.

Marital Status

The proportion of the population 65 and older that is married is projected to remain fairly stable over the next 30 years. Projections of marital status by gender, furthermore, indicate that the observed pattern of a larger proportion of elderly males than females being married in 1990 will continue through 2020. There are, however, projected shifts in the proportion married by age and gender. (See figure 8.) As the baby boomers retire, their lifetime marriage experience—higher rates of divorce and lower marriage rates—will change the marital status profile of the young-old male population. Males aged 65 to 74 and 75 to 84, therefore, are projected to experience a slight

Figure 8
Percentage of Elderly Persons Married
1990 and 2020



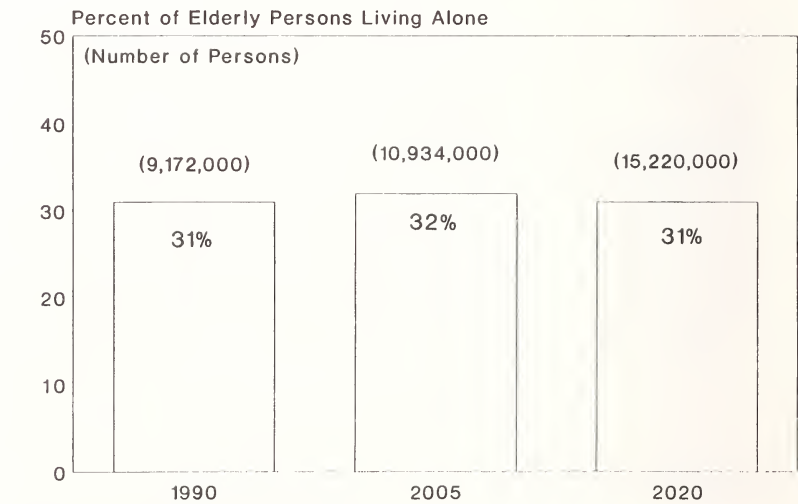
Source: SSA, OAct, Population projections by age and marital status, 1991.

decline in the proportion married. The pattern for elderly women is somewhat different. The Social Security Administration actuaries project increases in the proportion of women aged 65 to 74 and aged 75 to 84 who are married, from 53 percent to 55 percent for the youngest category and from 30 percent to 35 percent for the middle category. These shifts are attributable, in large part, to the improved mortality experience of their husbands.

Living Arrangements

Forecasts by researchers at Lewin/ICF reveal virtually no change in the percentage of elderly persons who are living alone. (See figure 9.)

Figure 9
Percent of Elderly Persons Living Alone



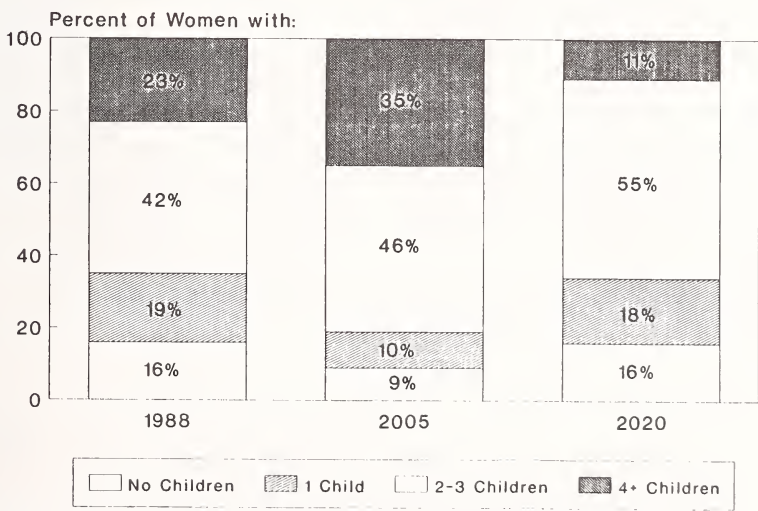
Source: Lewin/ICF, 1991.

Because of the overall increase in the elderly population, the number of elderly persons living alone is expected to increase from 9.2 million in 1990 to 15.2 million in 2020, or by 66 percent—the same rate of increase as the total elderly population.

Family Size

Family size also has important implications for the availability of social supports to future elderly cohorts. Because of the low fertility rates among Depression-era women relative to the next cohort of childbearing-age women, the proportion of elderly women who have had one or more children is projected to increase from 84 percent in 1988 to 91 percent in 2005. (See figure 10.)

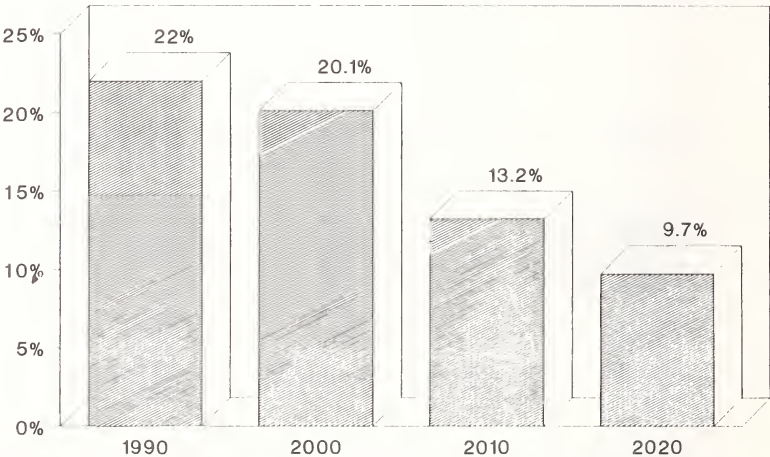
Figure 10
Family Size of the Population Over 65



Source: Spencer, G. "Demographic Implications of an Aging U.S. Population Structure During the 1990 to 2030 Period," *Future Research Quarterly*, Fall 1990.

By 2020, however, this trend will be reversed, with 16 percent of elderly women projected to have never had children. This trend varies by age group, particularly for women aged 85 and over who are most likely to need support from their families. Projections indicate that the percent of women age 85 or over with no living children will decrease dramatically from one out of five in 1990 to only one out of 10 in 2020. (See figure 11.)

Figure 11
Percent of Women Age 85 and Over
with No Living Children

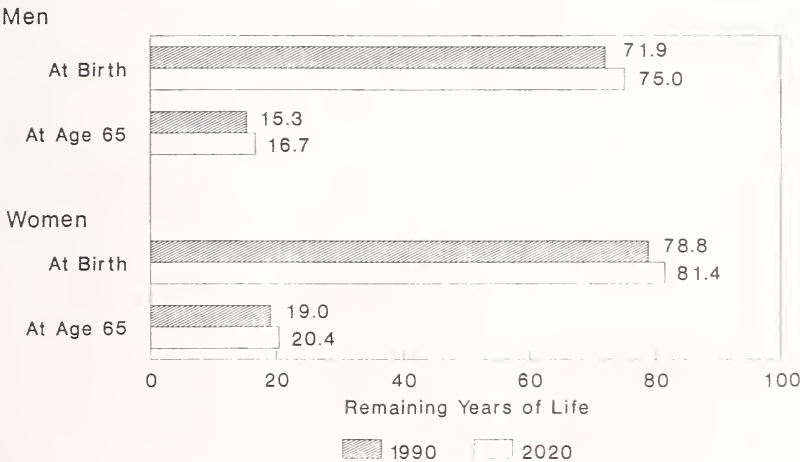


Source: Wolfe et al. *Intergenerational Transfers: A Question of Perspective*. Paper prepared for NIA by the Urban Institute's Population Studies Center, 1991.

Life Expectancy

Some gains in the life expectancy of men and women are projected for between now and 2020. (See figure 12.) Life expectancy at birth is projected to increase for males from 72 years in 1990 to 75 years in 2020 and for females from 79 years to 81 years. Males surviving to age 65 in 1990 can expect to live another 15.3 years; those reaching age 65 in the year 2020 are projected to live another 16.7 years. Life expectancy for women surviving to age 65 in 1990 is another 19 years; for 2020, the projected remaining years is 20.4.

Figure 12
Life Expectancy at Birth and at Age 65
1990 and 2020

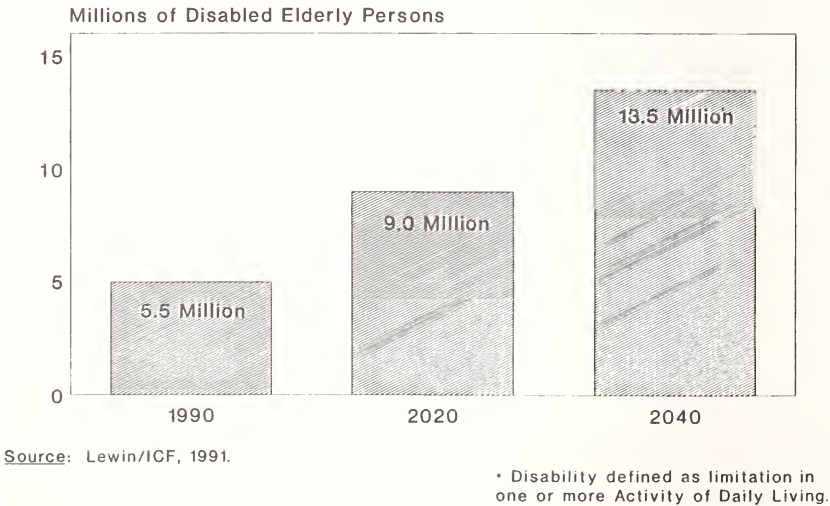


Source: 1991 OASDI Trustees Report.

Disabled Elderly

One measure of disability status is the ability to perform important activities of daily living (ADLs). Using limitations in one or more of the following ADLs—eating, dressing, bathing, going to the toilet, and transferring (getting out of bed or chair)—to assess the disability status of the current and future generations of elders suggests that the size of the disabled elderly population will more than double over the next 50 years, from 5.5 million in 1990 to almost 9 million in 2020 and to over 13.5 million in 2040. (See figure 13.) These projections are based on current disability rates and reflect only the increase in the number and age distribution of the elderly.

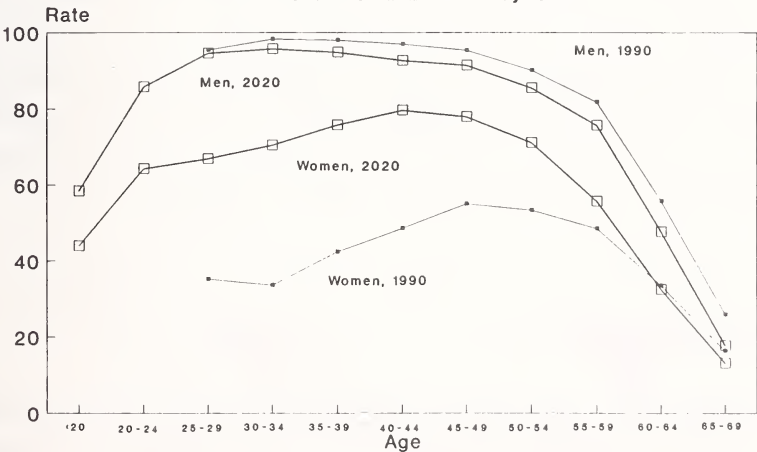
Figure 13
Projections of the Size of the
Disabled* Elderly Population



Labor Force Participation

One of the major determinants of the financial status of persons age 65 and over is their work history prior to retirement. A comparison of the lifetime previous labor force participation rates of the cohorts of men and women 65 to 69 in 1990 and those projected to be in this age category in 2020 illustrates several trends. (See figure 14.) Data for females indicate a dramatic increase in previous labor force participation for the 2020 cohort of 65 to 69 years olds, compared with the 1990 cohort. Among the 1990 cohort of retirement-age women, for example, 53.3 percent were in the labor force when they were age 50 to 54; the projected estimate for the 2020 cohort is

Figure 14
Labor Force Participation Rates over the
Life Cycle for Persons Age 65-69
1990 Actual and 2020 Projected



Source: SSA, OAct. Unpublished tables of labor force participation, 1991.

71.1 percent. One-third of the females 65 to 69 in 1990 were in the labor force at age 30 to 34. In contrast, seven out of 10 women in the 2020 cohort will have been employed at age 30 to 34. These trends highlight the fact that women retiring in the future will have more complete work histories, which in turn will contribute to greater income security through Social Security and pension benefits on their own work records.

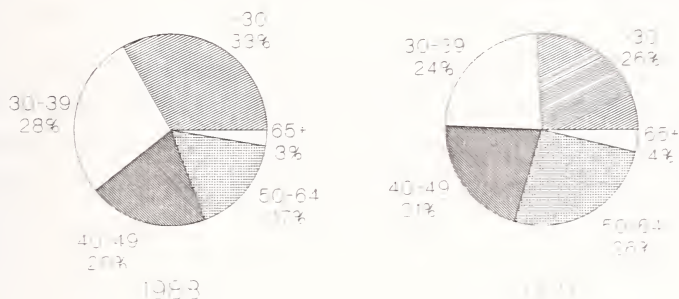
The data also show a continued trend toward earlier retirement for men. Only 47.6 percent of men in the 2020 cohort are projected to be in the labor force at age 60 to 64 compared with the 55.7 percent rate for the 1990 age cohort. Similarly, only three-quarters of the 2020 cohort are projected to be employed at age 55-59 compared with the 81.7 percent rate for the 1990 age cohort.

The composition of the labor force is projected to shift between 1988 and 2020. During the next 30 years, the work force will become older. In 1988, two out of five workers were age 40 or older; in 2020, one-half of all workers will be at least 40 years old. (See figure 15.) Minorities are also projected to comprise a larger proportion of the work force between 1990 and 2020. The proportion of workers who are white is projected to decrease from 86 percent in 1990 to 81 percent in 2020. (See figure 16.)

Income of the Elderly

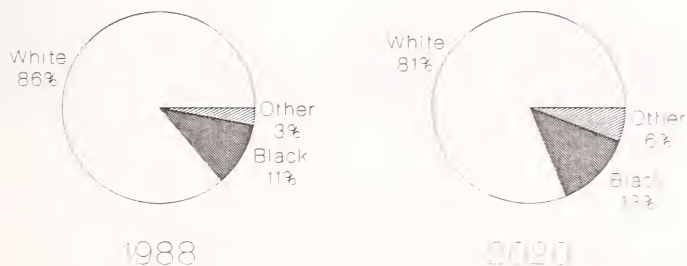
Data presented here on the income of the elderly are from the Pension and Retirement Income Model of Lewin/ICF, Inc., and are based on Alternative II demographic and economic assumptions used in the 1991 OASDI Trustees Report. The projections are for the total elderly population, including those institutionalized. Projections are based on current Social Security provisions

Figure 15
Age Composition of the Workforce
1988 and 2020



Source: H. Fullerton, Bureau of Labor Statistics, Unpublished Tabulations, 1991.

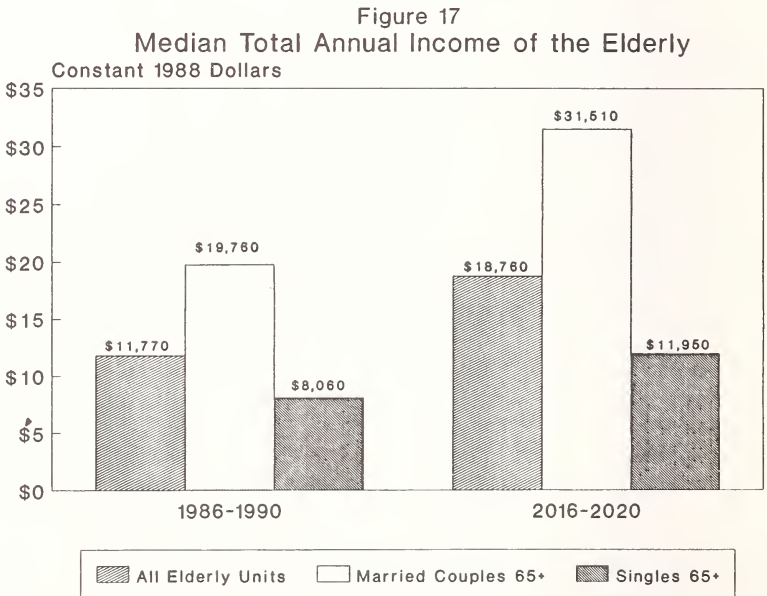
Figure 16
Racial Composition of the Workforce
1988 and 2020



Source: H. Fullerton, Bureau of Labor Statistics, Unpublished Tabulations, 1991.

and generally assume that observed levels of pension coverage and asset holdings of the elderly will continue. The Panel recognizes many uncertainties are associated with projections of retirement income, particularly pension and asset income, 30 years into the future.

According to these projections, the economic status of the elderly is projected to improve over the next 30 years. The median total income (in 1988 dollars) for all family units 65 and over is projected to increase from \$11,770 in the 1986-1990 period to \$18,760 in the 2016-2020 period. (See figure 17.)

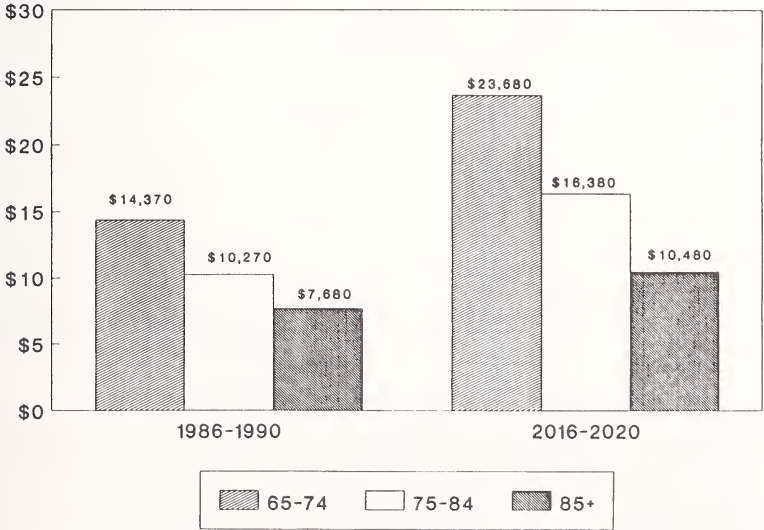


Source: Lewin-ICF, 1991.

This change is due, in large part, to the fact that earnings-related benefits from Social Security and pensions are projected to keep pace with assumed growth in real wages. Under the Trustees' 1991 Alternative II assumptions used in the projections, real average covered wages grow by 39 percent between 1988 and 2018.

The magnitude of this increase in median income of the elderly, however, differs by marital status. Specifically, the percentage increase for all elderly family units and married couples is 59 percent, while the increase for singles is only 48 percent. Younger elders will continue to have higher incomes than those in the older age categories. (See figure 18.) While the median

Figure 18
Median Total Annual Income of the Elderly, by Age Group
Constant 1988 Dollars

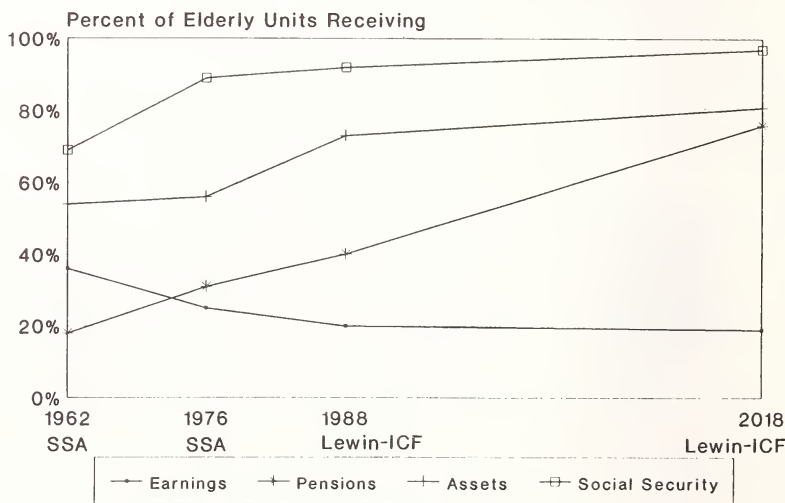


Source: Lewin-ICF, 1991.

income of elderly units in all age groups is projected to rise over the next three decades, the increase is substantially smaller for the 85-and-over age population.

Social Security continues to be the most prevalent source of income for the elderly. The percent of all elderly receiving Social Security benefits is projected to increase from 92 to 97 percent between 1988 and 2018. (See figure 19.) The historical trend toward increases in both pensions and assets as sources of income is projected to continue over the next 30 years. The increase in pensions as an income source is projected to be the most dramatic, with almost twice the percentage of elderly receiving pension

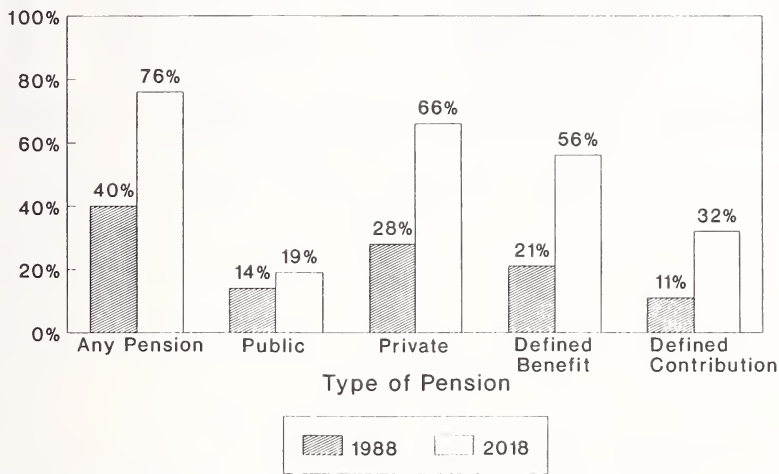
Figure 19
Trends in Receipt of Income (By Source)



Source: Lewin/ICF, 1991.

benefits in 2018 as in 1988. An increase is projected for the receipts of both public and private pensions. (See figure 20.)

Figure 20
Percent of Elderly Family Units
Receiving Pension Income

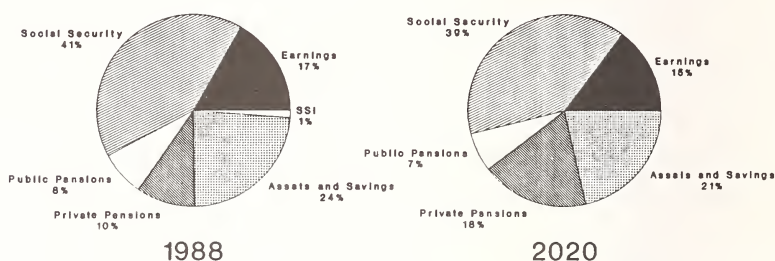


Source: Lewin/ICF, 1991

Shares of Income

Social Security is projected to remain the major source of income for the elderly, comprising 39 percent of aggregate income in 2020. (See figure 21.) As a share of aggregate income, pensions from both private and public employee plans are projected to increase from 17 percent in 1988 to 25 percent in 2020. Income from assets as a share of aggregate income are projected to decrease from 24 percent in 1988 to 21 percent in 2020.

Figure 21
Shares of Aggregate Income
All Elderly Family Units, 1988 and 2020



Source: Lewin/ICF, 1991.

Relative Importance of Social Security

Nearly three out of five elderly family units are projected to rely on Social Security for 50 percent or more of their income in 2018 (a slight decline of 3 percentage points from 1988). (See figure 22.) Three-quarters of those 85 and over will rely on these benefits for 50 percent or more of their income.

Financial Asset Holdings

Elderly family units also are projected to have more financial assets over the next three decades, excluding home ownership and mortgages. (See figure 23.) The percentage of elderly family units with less than \$10,000

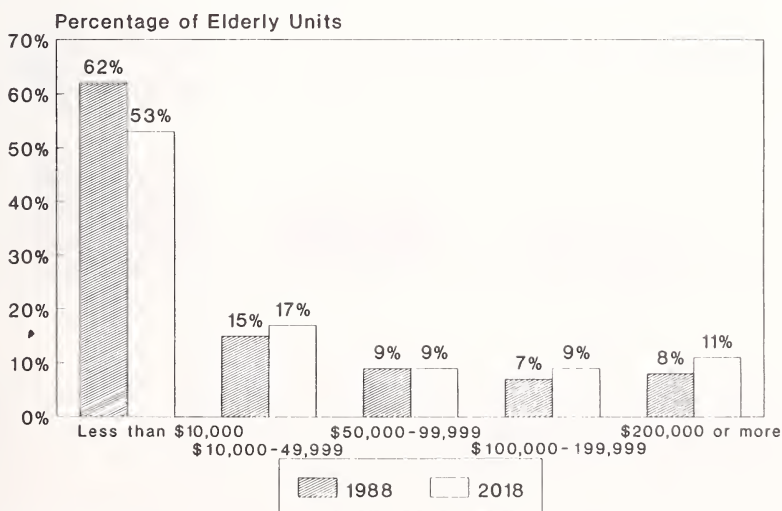
Figure 22
Relative Importance of Social Security Income

	<u>1988</u>	<u>2018</u>
All Elderly		
50% or More	62%	58%
80% or More	38%	26%
Elderly 85 and Over		
50% or More	80%	77%
80% or More	56%	48%

Note: For purposes of this table, estimates refer to the percentage of elderly for which Social Security is 50% or more, or 80% or more of income.

Source: Lewin-ICF, 1991.

Figure 23
Financial Assets of the Elderly



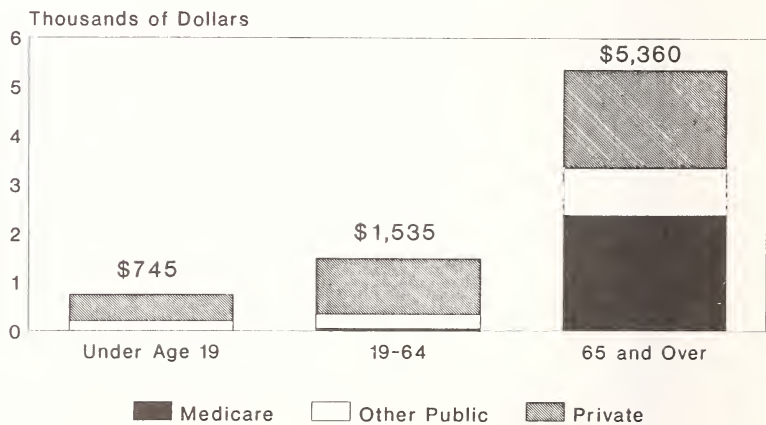
Source: Lewin/ICF, 1991.

in assets, for example, while remaining very large, will decrease from 62 percent to 53 percent between 1988 and 2018. At the same time, the proportion with assets between \$100,000 and 200,000 will increase from 7 percent to 9 percent; those with assets valued at \$200,000 or more are projected to increase from 8 percent to 11 percent.

Health Spending by Age

Population aging is expected to have a significant impact on total health spending, because per capita health spending for the elderly is considerably higher than for working-age adults or children. (See figure 24.) In fact, per

Figure 24
Per Capita Health Expenditures
By Age Group, Calendar Year 1987



Source: Waldo et al. "Health Expenditures by Age Group, 1977-1987," *Health Care Financing Review*, 10(4), 1989.

capita health spending for the elderly was about 3½ times as much as for working-age adults and about 7 times as much as for children in 1987 (the most recent year for which HCFA has made such estimates).

For the elderly, Medicare accounts for 45 percent of personal health care expenditures, while Medicaid and other public programs account for 18 percent and private expenditures from insurance or direct out-of-pocket expenditures account for 37 percent.

Health Expenditure Projections

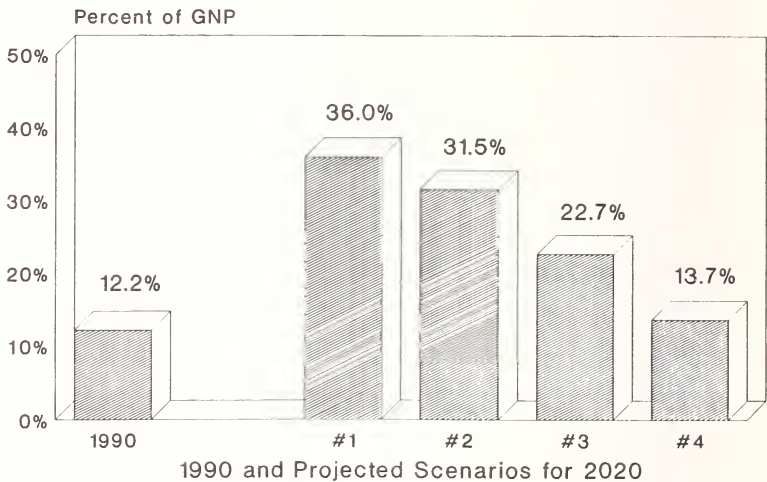
In 1990, total spending for health care from both public and private funds represented 12.2 percent of GNP. In order to better understand how different assumptions about growth in health care expenditures might affect the proportion of GNP that is consumed by health care spending, the Panel asked HCFA to provide a range of projections of health care expenditures based on various estimates of the rate of increase in health spending. (See figure 25.)

HCFA was already in the process of developing three such projections. The projections and the underlying assumptions are discussed in greater detail in the next chapter.

The first, and highest, projection represents no reduction in the rate of growth in real health spending. In this projection, health care would account for 36 percent of GNP in 2020.

The second projection represents somewhat slower growth in real health spending. In this projection, health care would account for 31.5 percent of GNP in 2020.

Figure 25
National Health Expenditure Projections
as a Percent of GNP



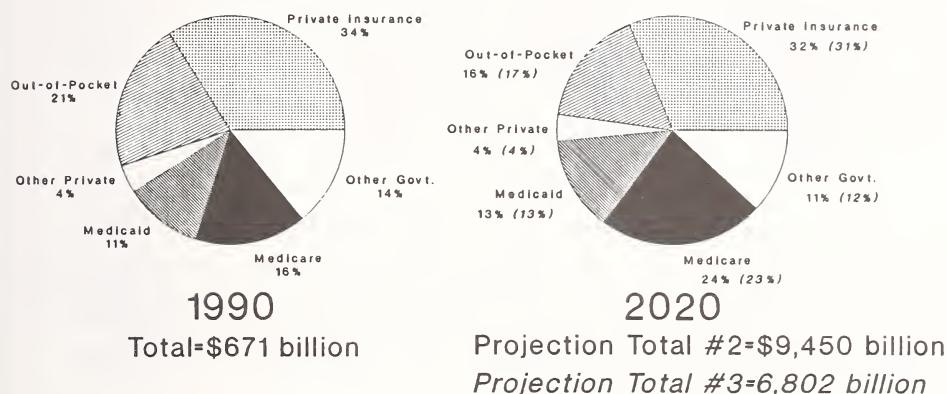
Source: HCFA, OAct, 1991.

The third projection, which shows much slower growth, has total health spending rising to 22.7 percent of GNP in 2020. This projection is consistent with the Alternative II projections of Hospital Insurance in the 1991 HI Trustees Report.

The fourth projection illustrates the effect of an immediate, sharp curtailment of spending growth.

Projections of national health expenditures by source of funds, using projections 2 and 3, indicate that there will be a shift from private to public spending between 1990 and 2020. The source of funds distribution is very similar in both projections. (See figure 26.) In 1990, private

Figure 26
National Health Expenditure Projections
By Source of Funds



Source: HCFA, OAct, 1991.

sources—including private insurance, out-of-pocket and other sources—accounted for 58 percent of all health care spending.

By 2020, private contributions are projected to decrease to 50 percent under projection 2 and to 49 percent under projection 3, while government sources are projected to increase from 42 percent to about half of all health care expenditures. Medicare as a share of all spending is projected to rise from 16.5 to 25.5 percent; the Medicaid share is projected to increase two percentage points, from 11 percent in 1990 to 13 percent in 2020. Federal spending is projected to increase from 29 percent to nearly 37 percent of all health care spending; State and local spending, in contrast, is projected to increase only slightly, from 13 to 14 percent.

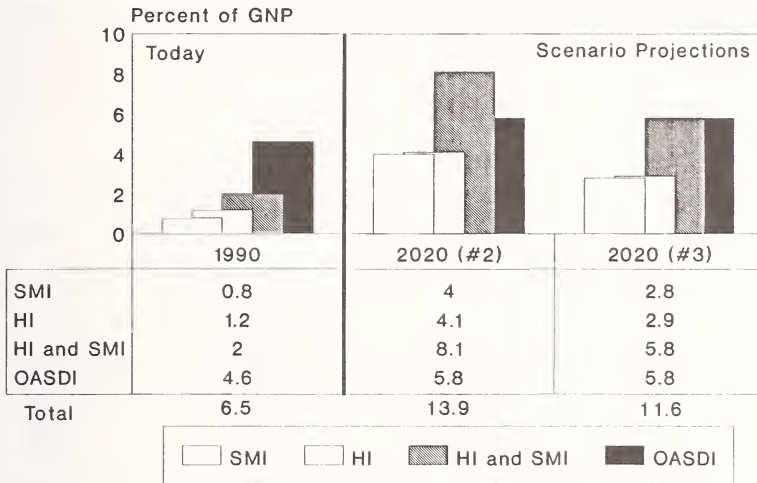
Social Security and Medicare as a Share of GNP

Between 1990 and 2020, the share of gross national product (GNP) represented by Social Security (OASDI) is projected to rise from 4.6 to 5.8 percent under the intermediate assumptions in the 1991 OASDI Trustees Report. Medicare (HI and SMI combined) is projected to grow from 2.0 to 8.1 percent of GNP under health spending projection 2. Under projection 3, Medicare would grow from 2.0 to 5.8 percent of GNP by 2020. (See figure 27.)

Medicare is growing much more rapidly than OASDI under both health spending projections. In 1990, Medicare outlays were 43 percent of OASDI outlays; by 2020, Medicare spending is projected to be 40 percent higher than OASDI spending under projection 2 and to be nearly equivalent to OASDI spending under projection 3.

The rising cost of Social Security is due mainly to the increase in the size of the beneficiary population after about 2010, when the baby boom generation begins to retire. This demographic shift also increases the cost of Medicare. However, Medicare costs will rise disproportionately, because health care costs have been rising more rapidly than prices or wages in the rest of the economy. Furthermore, Medicare costs are affected by the increasing number of persons who live to advanced ages, at which time health care utilization and costs are substantially above the average for the total aged population.

Figure 27
HI, SMI, and OASDI Outgo
As a Percent of GNP



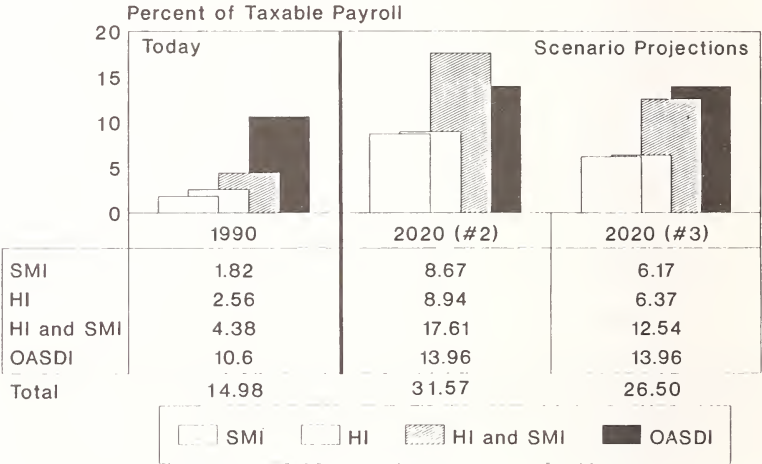
Source: SSA and HCFA, 1991.

Social Security and Medicare as a Share of Taxable Payroll

Both Social Security and Hospital Insurance under Medicare are financed by a tax paid by employees and employers on covered earnings up to a specified maximum. In 1991, the maximum taxable earnings base is \$53,400 for OASDI and \$125,000 for HI. Each base will be adjusted in future years to keep pace with the growth in average earnings in the economy. The tax rate is 6.2 percent for OASDI and 1.45 percent for HI, for a combined rate for employees and employers of 7.65 percent each on earnings up to \$53,400. On earnings between \$53,400 and \$125,000, they pay the HI tax of 1.45 percent.

The cost of Social Security and Medicare is a much larger share of taxable payroll than of GNP. (See figure 28.) Between 1990 and 2020, as a share of taxable payroll, OASDI is projected to grow from 10.6 to 14.0 percent. HI is projected to grow from 2.6 to 8.9 percent under health spending

Figure 28
 HI, SMI, and OASDI Outgo
 As a Percent of Taxable Payroll



Source: ACSS, Health Technical Panel Report, 1991.

projection 2 and to 6.4 percent under health spending projection 3. SMI, while not financed by the payroll tax, is projected to grow in size from 1.8 percent to 8.7 percent of HI taxable payroll under health spending projection 2 and to be 6.2 percent of HI payroll under projection 3. Taken together, OASDI and both parts of Medicare are roughly 15 percent of taxable payroll in 1990 and about 31.6 percent in 2020 under the health spending Projection 2 and 26.5 percent under projection 3.

Long-Term Care Expenditures

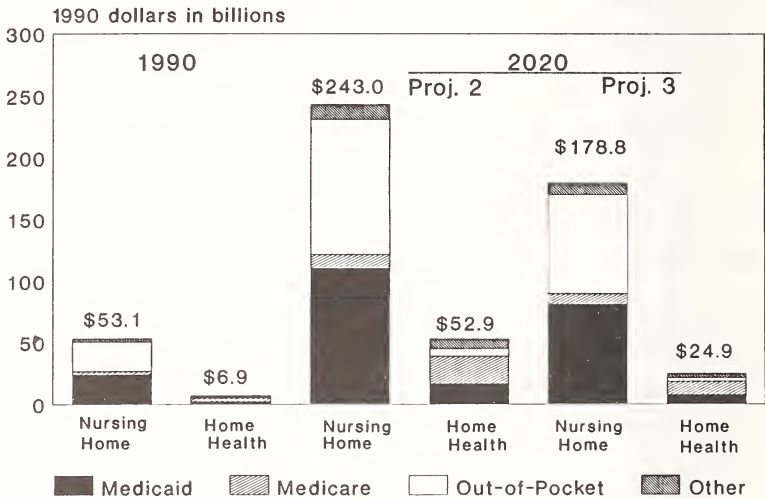
Projections of the cost of Medicare reflect the increase in acute-care expenditures associated with the aging of the population and the growth in health care costs. Long-term care services, however, are generally not covered by Medicare, and they are expected to grow as the population ages.

According to the health spending projections provided by HCFA, by 2020 nursing home expenditures are projected to continue to represent just over 8 percent of total national health expenditures, and home health care expenditures will continue to be between 1 and 2 percent of total expenditures. They are projected to grow more rapidly after 2020 as more of the baby boom cohort reach advanced ages.

In 1990, about 45 percent of nursing home care expenditures were paid out of pocket by the elderly or their families. Another 45 percent was financed by Medicaid, while 5 percent was paid by Medicare and 5 percent came from other sources. If these relationships continue, growth in long-term care spending will result in significant growth in Medicaid and out-of-pocket spending for these purposes.

Total spending for nursing home care (in 1990 dollars) is projected to rise from \$53.1 billion in 1990 to \$243.0 billion in 2020 under health projection 2. In this scenario, and with Medicaid continuing to pay for 45 percent of nursing home costs, Medicaid spending for this purpose would be \$110 billion in 2020. Under the slower growth projection 3, total nursing home spending would rise to \$178.8 billion in 1990 dollars, with the Medicaid share being \$81 billion. (See figure 29.)

Figure 29
Long-Term Care Expenditures,
1990 and 2020



Causes of growth in nursing home expenditures are discussed more fully in the next chapter and include: the growth in the number of elderly persons; some growth in the price of nursing home care because wages of nursing home employees—like wages of all workers—are projected to grow somewhat faster than prices; and some additional growth in nursing home costs per day of care because residents may be more severely disabled, as less severely disabled persons opt for care in the community.

Sources

Advisory Council on Social Security, *Health Technical Panel Report*, 1991.

Lewin/ICF, Unpublished data on income of the elderly prepared for the staff of the Advisory Council on Social Security, 1991.

Organization for Economic and Cooperative Development, *Aging Populations: The Social Policy Implications*, Paris, 1988.

Spencer, G., "Demographic Implications of an Aging U.S. Population Structure During the 1990 to 2030 Period," *Future Research Quarterly*, Fall 1990.

U.S. Department of Commerce, Bureau of the Census, "Projections of the Hispanic Population: 1983 to 2080," *Current Population Reports, Population Estimates and Projections*, Series P-25, No. 995, November 1986.

U.S. Department of Labor, Bureau of Labor Statistics, Unpublished tables prepared by Howard Fullerton, 1991.

U.S. Department of Health and Human Services, Health Care Financing Administration, Office of the Actuary, National Health Expenditure Projections, prepared for the staff of the Advisory Council on Social Security by S. Sonnefeld, 1991.

U.S. Department of Health and Human Services, Social Security Administration, Office of the Actuary, Unpublished data prepared by S. Goss and A. Wade, 1991.

U.S. Department of Health and Human Services, Social Security Administration, Office of the Actuary, *OASDI Annual Trustees Report*, 1991.

Waldo, Sonnefeld, McKusick and Arnett, "Health Expenditures by Age Group, 1977 to 1987," *Health Care Financing Review*, Vol. 10, No. 4, Summer 1989.

Wolfe, D., V. Freedman, B. Soldo, and E. Stephen, *Intergenerational Transfers: A Question of Perspective*, Population Studies Center, The Urban Institute and Department of Demography, Georgetown University, Washington, D.C., February 1991.

ANALYSIS OF TRENDS

Overview

Focus of Expert Panel

The picture of 2020 points to two significant trends: the demographic shift toward an aging population and the rapid rate at which health care costs are rising. The significance of these trends, in conjunction with estimates of resources available to the nation and to individuals in 2020, became a major focus of the Expert Panel.

The Expert Panel raised questions about the implications of these trends for the future. What does it mean for our society to have an over-65 population in 2020 that is much larger than that in 1990, and an over-85 population that nearly doubles? What additional resources will be required to meet the needs of the elderly? Does the drop in the support ratio from 3.4 workers per beneficiary in 1990 to 2.4 in 2020 allow for adequate sources of funding for the projected increased cost in social programs for the elderly? How does the increase in the elderly population contribute to growth in health expenditures? What will be the impact on the economy if health care expenditures continue to grow as projected?

The Expert Panel recognized that many of these questions have no clear-cut answers. To address the issues raised by the demographic and health expenditure trends, the Panel developed several analytic exercises to illustrate the implications of the projections for 2020. The Panel is aware of the limitations of such an approach, recognizing that changes in assumptions and policy actions could dramatically alter the outcome. In addition, advances in

science and technology could alter outcomes in unpredictable ways. Nevertheless, the Panel found the exercises instructive and relevant.

International Trends

The aging of the population is not unique to the United States. The long-term decline in fertility rates experienced earlier in this century produced a shift in age structure in many industrialized countries. In fact, by the end of this decade Japanese and German¹⁴ populations will have already aged to nearly the same level the United States is projected to reach in 2020. In 2020, nearly all other industrialized Western countries will have a greater percentage of the population over age 65 than the United States.

Throughout these developed economies, the relative decline in the working-aged populations heightens concerns about the cost of retiree income maintenance, health care, and other social programs, as well as about the willingness and ability of the working-aged populations to bear the increased financial burden.

The cost of health care has become a global issue. The United States will not be alone as it grapples with the serious issues of 2020. It is often pointed out that the United States spends more per capita and as a percentage of GNP than any other country. Some countries, however, are currently experiencing a faster rate of real growth in health care spending than the United States. The rising cost of health care in many Western countries has prompted them to examine ways to restrain health care expenditures and achieve greater efficiency in health care systems.

¹⁴ 1988 data from the Organization for Economic Cooperation and Development are for the Federal Republic of Germany (the former West Germany).

Contrary to the common beliefs of some, the aging of the population explains a relatively small proportion of the annual increase in costs in these countries. This is true for the United States as well, as will be discussed in this chapter. The growing intensity of medical services is one of the biggest factors associated with cost increases in these countries and in the United States.¹⁵

Overview of Chapter

This chapter is divided into six sections. The first section examines the new projections of total health spending that were provided to the Panel by the Office of the Actuary, HCFA. The second section examines the macroeconomic consequences of those trends in health spending in combination with other effects of an aging population.

The third section considers the implications of growing health care and retirement benefit costs on individuals' financial well-being and access to health care. The fourth section reviews the indicators of when expenditures may pass an acceptable threshold. The fifth section takes a closer look at implications of the spending projections for the health care delivery system of 2020. The sixth section considers the security of retirement benefit systems: that is, whether institutions upon which current retirees depend will be there for retirees in 2020.

¹⁵ Intensity refers to the growth in expenditures per unit of service (per hospital inpatient day or per physician visit, for example) over and above that accounted for by general or health care price inflation.

Health Expenditure Projections

This section presents new projections of national health care expenditures to 2020 that were prepared by the Office of the Actuary, HCFA. This is the first time that the HCFA has projected health care spending beyond 2000.¹⁶ Consequently, the assumptions underlying the projections are of particular interest.

Assumptions

The four projections of health care spending that HCFA provided to the Panel are summarized in table 3.1, along with information about the components of growth in each projection. All four projections are based on the intermediate (alternative II) assumptions used in the 1991 OASDI and HI Trustees reports regarding overall economic and demographic trends. Key assumptions are that:

- **Inflation** as measured by the GNP implicit price deflator grows at an average annual rate of 3.9 percent in the 1990's and 4.0 percent in 2000 and later;
- The **real wage differential** (the growth in average annual wages in excess of inflation) is, on average, 1.1 percent.

¹⁶ Sonnefeld, Sally T., et.al., "Projections of national health expenditures through the year 2000," *Health Care Financing Review*, Fall, 1991. See also, Waldo, Daniel R., et.al. "Health expenditures through the year 2030: three scenarios for growth," *Health Affairs*, Winter 1991.

Table 3.1

Growth in Health Expenditures Under Four Projections

	Projection			
	1	2	3	4
Health Expenditures as a Percent of GNP				
Actual				
1980	9.1	9.1	9.1	9.1
1990	12.2	12.2	12.2	12.2
Projected				
2000	17.4	17.4	16.4	13.1
2010	24.5	23.0	19.2	13.3
2020	36.0	31.5	22.7	13.7
Average Annual Percentage Increase in Total Health Expenditures				
1970-1990	11.6	11.6	11.6	11.6
1970-1980	12.8	12.8	12.8	12.8
1980-1990	10.4	10.4	10.4	10.4
1980-1985	11.0	11.0	11.0	11.0
1985-1990	9.8	9.8	9.8	9.8
1990-2020	9.7	9.2	8.0	6.2
1990-2000	9.8	9.8	9.2	6.7
2000-2010	9.6	8.9	7.6	6.1
2010-2020	9.6	8.9	7.3	5.8
Average Annual Percentage Increase in Real Per Capita Health Expenditures ^a				
1970-1990	4.4	4.4	4.4	4.4
1970-1980	4.1	4.1	4.1	4.1
1980-1990	4.7	4.7	4.7	4.7
1980-1985	4.4	4.4	4.4	4.4
1985-1990	5.0	5.0	5.0	5.0
1990-2020	4.7	4.3	3.1	1.4
1990-2000	4.7	4.7	4.2	1.8
2000-2010	4.7	4.0	2.7	1.3
2010-2020	4.7	4.1	2.6	1.1

(Continued)

Table 3.1 (Continued)

	Projection			
	1	2	3	4
Annual Percent Increase in Health Care Prices (in Excess of General Inflation) ^b				
1970-1990	1.2	1.2	1.2	1.2
1970-1980	0.3	0.3	0.3	0.3
1980-1990	2.0	2.0	2.0	2.0
1980-1985	2.1	2.1	2.1	2.1
1985-1990	2.0	2.0	2.0	2.0
1990-2020	1.2	1.2	0.9	0.0
1990-2000	1.4	1.4	1.2	0.0
2000-2010	1.2	1.2	0.8	0.0
2010-2020	1.2	1.2	0.7	0.0
Average Annual Percentage Increase in Real Per Capita "Health Care Dollars" ^c				
1970-1990	3.2	3.2	3.2	3.2
1970-1980	3.8	3.8	3.8	3.8
1980-1990	2.6	2.6	2.6	2.6
1980-1985	2.3	2.3	2.3	2.3
1985-1990	2.9	2.9	2.9	2.9
1990-2020	3.5	3.1	2.2	1.4
1990-2000	3.3	3.3	3.0	1.8
2000-2010	3.5	2.8	1.9	1.3
2010-2020	3.5	2.9	1.9	1.1

^a Total growth in expenditures deflated by average annual price growth as measured by the GNP implicit price deflator, which is: 7.4% in the 1970's; 4.4% in the 1980's; 3.9% in the 1990's; and 4.0% in 2000 and thereafter. Expenditures also adjusted for average annual population growth of: 0.9% for the 1970's; 1.0% in the 1980's; 0.9% in the 1990's; 0.7% for the decade ending in 2010; and 0.6% for the decade ending in 2020.

^b Increase in health price deflator, net of general inflation.

^c Represents increase due to increased utilization and intensity and change in the age/sex composition of the population.

SOURCE: Office of the Actuary, Health Care Financing Administration, 1991.

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- Overall average annual **population growth** is 0.9 percent in the 1990's, 0.7 percent in the decade ending in 2010, and 0.6 percent in the decade ending in 2020.
 - Because of past declines in fertility and past and projected improvements in mortality, **population aging** continues. The portion of the population aged 65 or older grows from 12 percent to 16 percent between 1990 and 2020, while the portion aged 85 and older grows from 1.2 to 1.9 percent.

The combination of inflation, wage growth and population changes under 1991 alternative II assumptions cause real GNP per capita to grow at an average annual rate of about 1.0 percent over the next 30 years.¹⁷

With regard to the health care sector, HCFA's Projections 1, 2, and 3 are based on assumptions that: (1) Medicare and Medicaid benefit provisions remain as they are now and are adequately financed; and (2) there are no major changes in health care financing and no major technological breakthroughs that would significantly alter emerging patterns of morbidity and mortality. Projection 4 represents a sharp curtailment in health spending growth and is considered separately.

¹⁷ GNP growth rate deflated by the assumed growth in the consumer price index of 4.0 percent over the next 30 years. The assumed rate of growth in prices as measured by the GNP implicit price deflator is slightly slower than CPI growth in the 1990s. Consequently, if the GNP implicit price deflator is used, real per capita GNP is projected to grow at an average annual rate of 1.1 percent over the 30-year projection period.

Projections

The Panel focused its analysis on Projections 2 and 3. Projection 1 is included to show a continuation of recent trends with no slow-down in the rate of growth of health care spending. Projection 4 is included to illustrate the effect of a sharp curtailment in health spending growth. A description of the model used to project health expenditures and more detailed information about components of growth in spending for selected types of services are in appendix 3.

Projection 1 represents a continuation of the rate of growth in real per capita spending observed over the last 10 years and shows health spending rising to 36 percent of GNP by 2020.

Projection 2 represents some slow-down in spending growth compared to the past 10 years but is consistent with longer term trends in health care spending per capita.¹⁸ In this case, health spending reaches 31.5 percent of GNP in 2020.

In Projection 2 the average annual increase in total health spending is projected to be 9.2 percent over the next 30 years, which is somewhat smaller than the annual growth experienced over the last 20 years (11.6 percent). More of the past growth, however, was due to general price inflation and population growth. Adjusting for those two factors, real health spending per person grew at an average annual rate of 4.4 percent over the last 20 years and is projected to grow at about 4.3 percent per year over the next 30 years in Projection 2.

¹⁸ Real per capita expenditures are adjusted for general inflation (the GNP implicit price deflator) and population size, but not for changes in the age and sex composition of the population.

Part of the growth in "real" spending per person is due to growth in health care prices over and above general inflation. Health care prices are assumed to grow 1.2 percent per year faster than general prices in Projection 2, which is a continuation of the average rate over the last 20 years. (This average, however, is made up of much higher rates in the 1980's—2.0 percent—than in the 1970's—0.3 percent.)

The health price inflation rate measures the added cost of purchasing a constant market basket of health care services from one period to the next. Adjusting for assumed health price inflation, real per capita spending in "constant health care dollars" is projected to rise by 3.1 percent per year over the next 30 years, a rate only slightly lower than the annual growth rate of 3.2 percent over the last 20 years. In effect, the growth in "constant health dollars" per person reflects growth attributed to increased utilization and intensity of services, including increased health care consumption due to the aging of the population.

Projection 3 represents a slower rate of growth in total health spending and is consistent with the alternative II projections of Medicare's HI program through 2015 in the 1991 HI Trustees report.¹⁹ In this projection, total health spending rises to 22.7 percent of GNP in 2020.

In Projection 3, total dollar spending rises by an average annual rate of 8.0 percent over the next 30 years. After adjusting for general population

¹⁹ Projections in the HI Trustees report use different methods for projecting the first 25 years and the last 50 years of the Trustees' 75-year projection period. The 30-year projections of total health spending presented in this report use methods for the 30-year period that are similar to methods used for HI projections for the first 25 years. Because Projection 3 assumptions are consistent with the intermediate (alternative II) HI assumptions, projections are identical to the Trustees' HI projections for the first 25 years. Because somewhat different methods are used after the first 25 years, the results here will be slightly different from those projected in the HI Trustees report for HI expenditures after 2015.

and price growth, however, real spending per person rises by 3.1 percent per year. If health price inflation is also netted out, then spending per person is projected to rise at an annual rate of 2.2 percent, a rate of growth in utilization and intensity that is slower than historical trends.

Components of Growth in Spending

Table 3.2 shows the contribution of various factors to the projected growth in total current dollar spending over the last 20 years and for the next 30 years under the two middle projections. General factors—population growth and overall price inflation—account for over half of the growth in dollar spending and are the same in both projections.

The projections differ only in the growth rates of factors unique to health care—that is, in health care price inflation and in utilization and intensity of services. In Projection 2, the growth rates for these factors are similar to growth rate levels observed for the last 20 years—that is, health care price inflation of 1.2 percent and growth in utilization and intensity of 3.1 percent per year. Increased utilization and intensity—including that attributed to the aging of the population—account for 34 percent of the dollar growth in spending. If the health price inflation rate of the last 10 years were to continue, a higher portion of the annual increase in health expenditures would be due to health care price inflation. In the last 10 years nearly 45 percent of the growth in factors unique to health care was attributed to health care prices.

In Projection 3 the *relative role* of each component of growth is similar to that observed over the last 20 years. Factors unique to health care account for just over one third of the growth. Utilization and intensity alone account for 28 percent of the dollar growth in spending.

Table 3.2

Components of Projected Health Spending, 1990-2020

	1970-1990	1990-2020	
		Projection 2	Projection 3
Average Annual Rate of Growth (in Percent)			
Total Growth	11.6	9.2	8.0
General Factors	7.0	4.7	4.7
General Price Inflation	5.9	4.0	4.0
Population Growth	1.0	0.7	0.7
Factors Unique to Health Care	4.4	4.3	3.1
Health Care Price Inflation	1.2	1.2	0.9
All Other Factors*	3.2	3.1	2.2
Percent Distribution			
Total Components of Growth	100	100	100
General Factors	61	52	61
General Price Inflation	52	44	51
Population Growth	9	8	9
Factors Unique to Health Care	39	48	40
Health Care Price Inflation	11	13	12
All Other Factors*	28	34	28

* All other factors includes increases in utilization and intensity of services, including increases due to changes in the age and sex composition of the population.

Projection 3 thus implies that the growth in utilization and intensity—including that attributed to the aging of the population—will slow down in the future. To achieve the Projection 3 outcome by 2020 (no more than

22.7 percent of GNP allocated to health spending) will require slowing the annual rate of growth in utilization and intensity from 3.2 percent to 2.2 percent—or by about one third.

Effect of Aging of the Population Alone

The effect of aging of the population on the growth in utilization and intensity is not shown separately in Projections 1 through 3. Its effect is included with the increase in use and intensity associated with all other causes. An indication of the relative importance of population aging in accounting for the growing share of GNP allocated to health spending, however, can be gleaned from analysis of Projection 4.

Projection 4 represents an abrupt curtailment of health spending growth. It is based on assumptions that, beginning in 1992: (1) health care price inflation (in excess of general inflation) is zero; (2) real growth in health expenditures per person for each type of service, net of the effects of shifts in the age and sex composition of the population, does not exceed the rate of growth in GNP per person. In effect, health spending is permitted to grow more rapidly than GNP only to the extent that changes in the age/sex composition of the population cause it to do so.

Projection 4, thus, illustrates the growth in the health spending share of GNP that would be attributable solely to the aging of the population. Population aging is expected to increase health spending because the elderly consume significantly more health care per person than younger persons do. In 1987, for example, average health spending for the nonelderly was \$1,290,

compared to \$5,360 for those aged 65 and older (or \$9,180 for those aged 85 and older).²⁰

Projection 4, however, indicates that if health spending were allowed to grow faster than GNP only to the extent that changes in the age/sex composition of the population caused it to do so, then the health share of GNP would grow by only 1.5 percentage points by 2020. (See table 3.3.) This small growth in the GNP share contrasts sharply with the projected growth of 19.3 percentage points in Projection 2 (and 10.5 percentage points in Projection 3).

Clearly, growth in utilization and intensity of services for other causes are much more important than population aging alone in accounting for the growing share of GNP projected to be devoted to health care in 2020. The fifth section of this chapter discusses other factors underlying the growth in intensity.

Projected Change in Source of Funds and Types of Service

The sharpest growth in spending is for hospital services—which are projected to increase from 38 percent to 45 percent of total health spending. (See table 3.4.) Shares for physicians' services also grow (from 20 to 21 or 22 percent). Nursing home care and home health care also grow slightly as a share of total spending. In contrast, spending for other personal health care services (including dental care, pharmaceuticals, and vision care products) grow more slowly and consequently are projected to comprise a smaller share of total health spending. Finally, components of national health expenditures

²⁰ *Health Expenditures by age group, 1977 and 1987, by Daniel R. Waldo, *et.al.*, *Health Care Financing Review*, Summer 1989.

Table 3.3

Health Spending as a Growing Share of GNP

	Projection		
	2	3	4
Growth in GNP Share for Health Over Next 30 Years			
2020	31.5	22.7	13.7
1990	12.2	12.2	12.2
Percentage Point Increase in GNP Share, 1990-2020	19.3	10.5	1.5*

* Growth in GNP share if health spending were permitted to grow faster than GNP only to the extent that changes in the age/gender composition of the population caused it to do so.

other than for direct personal care are also projected to grow more slowly than direct services. These other expenditures include those for research, construction, public health service activities, the cost of administering public programs, and the net cost of private insurance.

Over the next 30 years there will be some redistribution between public and private spending. Private funds are projected to account for a smaller share of total spending, while Medicare picks up a larger share. The aging of the population results in a growing portion of the population eligible for Medicare. Medicare spending is projected to rise from about 16 percent to 25 percent of total health spending. The Medicaid share is projected to increase from 11 to 13 percent of total spending—reflecting, in part, increased nursing home use.

Table 3.4

**Source of Funds and Types of Service Under
Two Projections of Health Spending, 2020**

	Actual, 1990	2020 Projection	
		2	3
Source of Funds			
Total Spending (in Billions)	\$666.2	\$9,450.0	\$6,810.9
Total Percent	100.0	100.0	100.0
Private	57.9	49.6	49.3
Private Insurance	33.1	29.7	29.4
Out of Pocket	20.5	16.2	16.3
Other	4.4	3.7	3.6
Government	42.1	50.4	50.7
Medicare	16.5	25.8	25.5
Medicaid	11.2	13.4	13.3
Other	14.4	11.2	11.8
Federal	28.7	36.8	36.9
State and Local	13.3	13.6	13.8
Type of Service			
Total Spending (in Billions)	\$666.2	\$9,450.0	\$6,801.9
Total Percent	100.0	100.0	100.0
Personal Health Care	87.8	92.1	91.3
Hospital Care	38.4	45.6	44.4
Physicians Services	19.8	20.9	22.4
Nursing Home Care	8.0	8.3	8.5
Home Health Care	1.0	1.8	1.2
Other Personal Health Care	20.7	15.5	14.8
Other National Health Expenditures	12.2	7.9	8.7

SOURCE: Office of the Actuary, Health Care Financing Administration, 1991

Findings

Major findings from the health expenditure projections are that:

- Changes in the age and sex distribution of the population account for a small part of the growing share of GNP projected to be allocated to health spending.
- Changes in the intensity of services associated with hospital, physician, and nursing home use are the major factor underlying the real growth in health spending, although health care price inflation will also significantly contribute if the experience of the 1980's continues.
- The share of total health spending for hospital services is projected to increase significantly, while the shares for physicians' services and nursing home care are projected to increase slightly. Other personal health care is projected to decline as a share of total health spending.
- The sources of financing will shift from private to public (58 percent private in 1990 and 50 percent in 2020), with out-of-pocket spending falling from 20 to 16 percent of the total over this period.
- Medicare's share will increase substantially from 16 to 25 percent over this period, while Medicaid's share will increase from 11.2 to 13.3 percent, partly because of increased nursing home services.

The Panel recognizes that these projections are not true predictions of future health care consumption. They do, however, illustrate the outcomes for the assumptions on which they are based—particularly the assumption that there

is no change in current law or policy. The Panel believes that Projection 4—which assumes drastic curtailment in the rate of growth—is implausible. However, it believes that the other three projections are plausible in the absence of major policy changes.

Macroeconomic Analyses: Effect on Society

The Expert Panel carried out several analytic exercises to assess the macroeconomic implications of alternative projections of health and retirement spending in 2020. To construct a new macroeconomic model of the U.S. economy was beyond the Expert Panel's charge and time frame. Instead, the Panel considered alternative scenarios by putting together projections of total health spending, prepared by HCFA, with some rough estimates of nonmedical spending in the economy in 2020, using the framework of the National Income and Product Accounts.

The basic approach was to compare an estimate of aggregate societal output—that is gross national product, or GNP—in 2020 on an income, or supply, basis with the sum of independent estimates of national consumption and investment. Those independent estimates include spending for health, education, etc. Clearly, if the sum of the parts exceeds the projected total, then adjustments will be necessary. This exercise provides a sense of the scope of adjustments that will be needed.

Alternative Scenarios

In developing alternative scenarios regarding the components of consumption expenditures GNP in 2020, the Panel used health Projections 2 and 3 to distinguish two scenarios—Scenario A and Scenario B.

-
- Scenario A reflects total national health spending in 2020 as indicated in Projection 2 by HCFA; that is, total health spending would be 31.5 percent of GNP in 2020.
 - Scenario B reflects national health spending as indicated in Projection 3. By 2020 total spending would be 22.7 percent of GNP.

In all respects other than projected health spending, Scenario A and Scenario B use identical assumptions. The remaining assumptions are discussed briefly below.

- All demographic and economic trends reflect the intermediate (Alternative II) assumptions used in the 1991 reports of the Trustees of the OASDI and HI Trust Funds.

Personal consumption of goods and services other than health care is expected to change over the next 30 years. For example, real growth in income—as indicated by the assumed real wage growth of 1.1 percent per year—can be expected to increase the demand for nonmedical goods and services. To estimate components of personal consumption other than health care, the Panel focused on changes induced by increased income and by the increase in the portion of the population aged 65 and older. That is:

- Real per capita consumption of goods and services other than health care is assumed to keep pace with real growth in average annual wages—that is, 1.1 percent per year.
- Personal consumption expenditures are projected separately for persons under 65 and those aged 65 and older and are adjusted to

reflect observed differences between consumption of the elderly and the nonelderly. Specifically:

- Per capita consumption of goods and services other than health care is adjusted for population change using differences observed between aged and nonaged households and number of persons per household in the 1989 Consumer Expenditure Survey.
- Per capita health expenditures are allocated between the elderly and nonelderly using levels estimated by HCFA in 1987—that is, per capita spending for the elderly is a little over four times the level for the nonelderly.

The shift in relative consumption shares between the elderly and the nonelderly is shown in table 3.5. As the elderly increase from 12 to 16 percent of the population, their share of aggregate personal consumption for other than health care grows from 12 to 15 percent, while their share of aggregate personal health care spending rises from 36 to 45 percent.

Rising overall health expenditures, together with a growing aged population cause the elderly share of total personal consumption to rise from 15 percent in 1989 to 23 percent (under health Projection 2 in Scenario A) or 21 percent (under health Projection 3 in Scenario B).

In an efficient market economy, which can rather easily change the composition of output to meet changing demand conditions, there is no particular reason to think that the increasing share of non-health care consumption by the elderly will, by itself, strain the economy. The effect of population aging on the allocation of aggregate health spending is

Table 3.5

**Relative Share of Population and of
National Personal Consumption Expenditures by Age
1989 and 2020**

	1989	2020 Scenarios*	
		A	B
Percent of Population by Age			
Population: Total	100	100	100
Under Age 65	88	84	84
Age 65 and Older	12	16	16
Percent of Personal Consumption by Age			
Expenditures Other Than Health: Total**	100	100	100
Under Age 65	88	85	85
Age 65 and Older	12	15	15
Health Care Expenditures: Total***	100	100	100
Under Age 65	64	55	55
Age 65 and Older	36	45	45
Personal Consumption Expenditures: Total	100	100	100
Under Age 65	85	77	79
Age 65 and Older	15	23	21

* Scenario A incorporates HCFA's health spending Projection 2. Scenario B incorporates Projection 3.

** Allocation based on observed differences between elderly and the nonelderly households in the 1989 Consumer Expenditure Survey, and adjusted for changes in relative size of the aged population between 1989 and 2020.

*** Allocation based on observed difference in personal health expenditures by age 1987 and adjusted for changes in the relative size of the aged population between 1989 and 2020.

considerably greater, as the elderly and nonelderly use different types of health services.

To estimate the overall allocation of resources, the Panel made additional estimates about education spending, other government consumption, investment, and foreign sector demand. These assumptions are:

- Federal, State, and local government consumption of goods and services other than for education, health care and defense are assumed to represent the same share of GNP in 2020 as in 1989—or 7.0 percent.²¹
- Education might be expected to be a smaller share of national spending as children will represent a smaller share of the total population in 2020. For this exercise, education spending per person aged 5-21 is assumed to grow with average annual wages, given that compensation of educators is a major part of education costs. With this assumption, education spending declines from 6.0 of GNP in 1989 to 5.2 percent in 2020.
- Federal spending for national defense is assumed to represent 3.9 percent of GNP. This assumption is derived from a 25-year forecast by Data Resources, Inc. and represents a decline from the 1989 share of 5.8 percent.²²

²¹ Government transfers (such as Social Security or unemployment cash benefits, Medicare, or interest on the national debt) are not counted as government consumption. They are included as personal consumption to the extent that the benefits are consumed by households.

²² DRI 25-year projections of macroeconomic activity, February 1991. Independent estimates of defense spending are beyond the charge of this Panel. An alternative assumption, such that defense would remain the same share of GNP in 2020 as in 1989, would not significantly alter the outcome of the analysis.

-
- Based on historical relationships, gross private investment is assumed to represent 13 percent of GNP.
 - As a simplifying assumption, net exports and net foreign investment are assumed to be zero (an assumption that will be discussed in more detail later in this section).

The combined effect of these assumptions on the allocation of GNP in 2020 are shown in table 3.6. In current dollar terms, GNP is projected to increase nearly five-fold from \$5.2 trillion in 1989 to \$30.0 trillion in 2020. In real terms, per capita GNP is projected to increase by 37 percent, from \$20,340 to \$27,890 in 2020 (in 1989 dollars).

Does It All Add Up?

Despite the shift in the age distribution of the population in 2020 relative to 1989, most individual consumption categories change relatively little as a share of GNP. Personal consumption of goods—durable and nondurable goods, combined—remains about 31 percent of GNP. Services other than for health care also change very little, from 27 to 29 percent of GNP. As expected, the main change is the significant growth in personal consumption of health care services. Such spending nearly triples in the higher health spending projection in Scenario A and doubles in Scenario B. When health spending is included, the sum of all personal consumption expenditures grows significantly as a share of GNP, from 66 percent in 1989 to 83 percent in Scenario A or to 77 percent in Scenario B.

The remaining assumptions regarding government purchases and net investment result in only modest changes in these categories as a share of GNP. Consequently, the sum of the components of GNP in 2020 add up to

Table 3.6
Consumption Expenditures as a Percent of GNP

	1989	2020 Scenarios*	
		A	B
Gross National Product (Trillions)	\$5.2	\$30.0	\$30.0
Per Capita GNP (1989 Dollars)	\$20,340	\$27,890	\$27,890
Total Percent	100.0	100.0	\$100.0
Personal Consumption Expenditures	66.3	83.3	77.0
Goods	30.9	31.5	31.5
Durable Goods	9.1	9.7	9.7
Motor Vehicles and Parts	4.1	4.4	4.4
Furniture and Household Equipment	3.3	3.5	3.5
Other	1.7	1.8	1.8
Nondurable Goods	21.7	21.8	21.8
Food	11.4	11.6	11.6
Clothing and Shoes	3.9	3.9	2.9
Other	4.7	4.8	4.8
Services	35.5	51.8	45.5
Housing	10.3	10.9	10.9
Household Operations	4.0	4.3	4.3
Transportation	2.4	2.6	2.6
Medical Care	8.4	22.6	16.3
Education	0.8	0.7	0.7
Other	9.7	10.8	10.8

* Scenario A incorporates HCFA's health spending Projection 2. Scenario B incorporates Projection 3.

(Continued)

Table 3.6 (Continued)

	1989	2020 Scenarios*	
		A	B
Government Purchases	19.7	20.2	18.9
Federal	7.7	6.5	6.2
National Defense	5.8	3.9	3.9
Health (Excluding Transfers)	0.4	1.1	0.8
Other	1.5	1.5	1.5
State and Local	12.0	13.7	12.7
Education	5.2	4.5	4.5
Health (Excluding Transfers)	1.4	3.7	2.6
Other	5.5	5.5	5.5
Gross Private Domestic Investment	14.8	13.0	13.0
Gross U.S. Investment	13.0	13.0	13.0
Net Investment by Foreigners	1.9	0.0	0.0
Net Export of Goods and Services	-0.9	0.0	0.0
Residual (Excess Demand)	0.0	-16.6	-8.9
Education: Total	6.0	5.2	5.2
Health: Total	11.6	31.5	22.7
Items Identified Separately Above	10.1	27.4	19.7
Other Health Expenditures**	1.5	4.1	2.9

* Scenario A incorporates HCFA's health spending Projection 2. Scenario B incorporates Projection 3.

** Some health expenditures are not identified separately in the National Income and Product Accounts (NIPA). For Example, health programs for military personnel are "defense," rather than as separate health expenditures.

more than the projected level of GNP. In effect consumption demand for GNP will be 16.6 percent higher than the projected GNP under Scenario A, or 8.9 percent higher under Scenario B (as indicated by the "residuals" on table 3.6).

In this sense, the projections do not add up to the total GNP that will be available. Possible outcomes can be characterized by two extremes. Can consumption demand be reduced to accommodate the growth in health spending? Or, can the supply of goods and services grow enough to meet the excess consumption demand? Each question is discussed below.

Can Other Consumption Be Reduced?

One possible outcome would be for consumption of goods and services other than health care to grow more slowly than the 1.1 percent real growth projected in this exercise. One version of this outcome is illustrated in table 3.7. In this illustration, personal consumption of other goods and services is limited to whatever is available after projected demand for health, education, other government purchases and investment are met.

In this case, all other personal consumption would fall from 54 percent to 39 percent of GNP in the higher health spending Scenario A. That would mean real consumption per person of all goods and services other than health care could not grow at all between 1989 and 2020. Americans over the next 30 years could spend no more per person than was spent in 1989 for food, housing, clothing, transportation, and all other items except health care, even though real personal income grows by 37 percent. Roughly speaking, all of the increases in income would finance increased health expenditures.

Table 3.7

**Effect of Reducing Personal Consumption
Other Than Health Care**

	1989	2020 Scenarios*	
		A	B
GNP (in Trillions)	\$5.2	\$30.0	\$30.0
Total Percent	100.0	100.0	\$100.0
Projected Shares for:	11.6	31.5	22.7
Health	6.0	5.2	5.2
Education	12.8	10.9	10.9
Other Government Investment	14.8	13.0	13.0
Remainder Available for Other Personal Consumption	54.5	39.4	48.2
Per Capita Amounts in 1989 Dollars			
Total GNP	\$20,340	\$27,890	\$27,890
Health	2,360	8,790	6,330
Education	1,220	1,450	1,450
Other Government Investment	2,600	3,040	3,040
	3,010	3,630	3,630
Remainder Available for Other Personal Consumption	\$11,080	\$10,990	\$13,450

* Scenario A incorporates HCFA's health spending Projection 2. Scenario B incorporates Projection 3.

This outcome for the next 30 years contrasts sharply with the increased consumption Americans have enjoyed over the past 30 years. In 1989 Americans' average spending for consumption of all goods and services other than health care was \$11,080, in contrast with \$6,730 per person in 1960 (in 1989 dollars), for an average annual rate of real growth in spending of 1.6 percent. For U.S. households to experience no real growth in consumptions of all goods and services other than health care would mark a radical departure from past experience.

Under Scenario B, which represents a significant slow down in health spending growth, Americans over the next 30 years would have to severely limit their real growth in spending to far below historical growth rates. Of the change in real per capita income of \$7,550, just \$2,370 or 31 percent would be in non-health personal consumption, an increase of 0.6 percent per year. The increase in health-related consumption would be \$3,970. This represents a substantial change in the pattern of spending: personal non-health consumption in 1989 was 54 percent of GNP and health was 11.6 percent. While this change in the allocation of consumption could happen, it would again be a substantial change from historical patterns, so the Panel has little reason to think this allocation of GNP would be the outcome of the excess demand.

Can We Grow Out of It?

Another possible outcome is that, because of growth in demand, especially for medical services, supply will increase at a higher rate than that forecast under the Trustees intermediate (alternative II) economic and demographic assumptions. This can be characterized as a full-employment, high investment and high-savings growth path. It is clear, however, that if the intermediate economy looks like some combination of the 1989 and 2020

economies shown in table 3.6, saving rates will probably be too low to generate the increase in the capital stock necessary to produce the high growth rates needed.²³ Furthermore, under the assumption that personal consumption of nonmedical goods and services rises with real wage growth, the growth in GNP that would be needed to close the gap of the 16.6 percent residual would itself be expected to increase demand proportionately.

In general, three possible growth scenarios can be considered.

Faster growing economy, with corresponding growth in demand for goods and services other than health care. No further real growth in health spending. In this growth scenario, the gap between consumption demand and national product could be closed only if the economy grew faster than projected, yet health expenditures did not increase in response to the higher growth. As shown in table 3.8, in this growth scenario, real GNP per capita would have to grow by:

- 3.4 percent per year to reduce the 16.6 percent gap to zero under health spending Scenario A; or
- 2.6 percent per year to reduce the 8.9 percent gap to zero under health spending Projection 2 in Scenario B.

²³ The Panel says this with considerable caution because empirical work has not established a close relationship between the saving rate and the rate of growth. Nonetheless saving rates would be at historical lows (and even negative toward the end of the period), and economic theory says that net saving is required for economic growth. For example, if the capital-output ratio is to remain constant at, say, 2, a saving rate of 3 percent of GNP would general a growth rate of 1.5 percent.

Table 3.8

**Growth Rate Needed to Meet
Excess Demand Due to Health Expenditures**

(Average Annual Growth in
Per Capita GNP, in Percent)¹

Projected growth rate ²	1.0
Needed growth rate, if nonmedical consumption rises with real wages	
Scenario A	3.4
Scenario B	2.6

¹Per capita GNP deflated by the consumer price index.

²1991 Alternative II assumptions of the OASDI Trustees.

These growth rates contrast with a real per capita growth rate of about 1.0 percent per year under the alternative II assumptions, and they are much larger than growth rates over the past 20 years. In effect, national output would need to be about twice the size projected by the OASDI and HI Trustees under Scenario A, or about 60 percent larger under Scenario B.

Faster growing economy with corresponding growth in demand for all goods and services, including health care. By definition, this scenario allows no way to grow out of the mismatch between consumption demand and national resources.

Faster growing economy and no corresponding growth in consumption demand. Under this scenario, the rate of growth in real per capita GNP would have to grow by 1.5 percent or 1.3 percent under health spending Scenarios A and B, respectively.

The Panel concludes that it is not realistic to assume that the projected increase in demand would result in an increase in production at levels sufficient to close the gap between consumption demand and national resources under these scenarios. Based on the current economy, savings rates are likely to be too low to generate the necessary increase in plant and equipment to produce higher growth rates than those projected under Alternative II. In other words, it is unlikely that the economy can grow to meet the excess demand.

Furthermore, this excess demand projected in these scenarios may drive savings rates down. In addition, other consequences of population aging, both in the United States and abroad, could affect the rate of saving and investment in the United States. The first concerns the spending of assets by the elderly. As more of the population is elderly, a greater fraction of financial wealth will be held by the elderly. The elderly tend to draw upon their savings as they get older. Therefore, these trends suggest a decline in the savings rate. A second issue is the treatment of foreign trade. The scenarios examined here included the assumption that foreign trade is balanced, yet the United States has been a net importer for many years. These two issues are discussed further below.

Effect of Population Change on the Saving Rate

In this section the effect of the aging of the population on the savings rate is estimated. Two different methods are used, with similar results. The first

estimation is done by comparing the dissaving of assets by the elderly to the after-tax earnings of the nonelderly, today and in the future. The basic notion is that the older, retired generation sells financial assets (nonhousing assets) to the younger generation and uses the proceeds to purchase consumption goods produced by the younger generation. If the assets of the older generation increase because there are more older people, and the rate of dissaving occurs at a fixed rate, then, unless asset values go down, the younger generation will require a larger fraction of their earnings to purchase the decumulation by the older generation. The resulting change in the ratio of dissaving to earnings will capture the degree to which the shift in the population that is retired will affect personal savings.

The estimate of the change in savings rates is based on the following data and assumptions:

- Financial assets of the elderly (\$1.6 trillion in 1989²⁴) grow at a rate given by the assumed real per capita growth in GNP (about 1.0 percent per year) multiplied by the growth rate in the elderly population (1.7 percent per year).
- The rate of dissaving by the elderly is assumed to be 3.2 percent per year. This is the measured rate in the Retirement History Survey.²⁵ It is higher than the rate of dissaving of all assets (2.9 percent including housing) in the 1984 Survey of Income and Program

²⁴ Lewin/ICF projections for the Advisory Council on Social Security.

²⁵ Hurd, Michael D., 1987, "Savings of the Elderly and Desired Bequests," *The American Economic Review*, Vol. 77, No. 3, pp. 298-312.

Participation but lower than a measurement from the National Longitudinal Survey (5 percent).²⁶

Estimated dissaving by the elderly in 1989 was 2.4 percent of after-tax earnings. This compares with a personal saving rate out of disposable income (which includes nonwage income) of 4.6 percent. The ratio of dissaving to net earnings is projected to rise to 3.6 percent in 2020. Therefore, an additional 1.2 percent of net earnings will have to be devoted to absorbing the assets that the elderly decumulate. How this affects individuals will depend on how this change affects the price of the assets. The Expert Panel expects prices to be lower than anticipated in the absence of a population change, but not enough is known to make an informed speculation about the resulting price effects.

In 1989, net earnings were about 40.6 percent of GNP and they are projected to fall to 37.5 percent in 2020. Therefore, 1.0 percent of GNP was devoted to dissaving by the elderly in 1989, and 1.3 percent will be in 2020—a change of 0.3 percentage points.

The second method by which the change in savings was estimated is to examine current saving rates by age and then apply these to the projected age distribution in 2020. Based on the 1984 Survey of Income and Program Participation, the elderly dissaved 2.9 percent of their assets on average.²⁷ After-tax household incomes among the elderly were \$13,200.²⁸ Therefore,

²⁶ Diamond, Peter A. and Jerry Hausman, 1984, "Individual Retirement and Savings Behavior," *Journal of Public Economics*, 23, pp 81-114.

²⁷ Hurd, Michael D., 1991, "The Income and Savings of the Elderly," final report to AARP Andrus Foundation, typescript, SUNY, Stony Brook.

²⁸ *Consumer Expenditure Survey, Integrated Survey Data, 1984-86*. U.S. Department of Labor, Bureau of Labor Statistics, August 1989, Bulletin 2333.

the rate of dissaving as a share of net income is 16.6 percent. Assuming the total saving rate out of net income to be 4.6 percent and using the relative income shares of the elderly and nonelderly, the rate of saving from after-tax household income of the nonelderly was 7.6 percent. Assuming that relative household incomes do not change, then population change alone will cause the saving rate out of net income to fall by 1.2 percent in 2020. As a fraction of GNP, this decline is 0.7 percent of GNP.

These two very different methods, each of which is based on a number of assumptions and on different data, come to rather similar conclusions: the change in the saving rate due to the aging of the population will be less than 1 percent of GNP and more likely about 0.5 percent. Taken by itself, this would not seem to be a matter of concern.²⁹ However, it puts downward pressure on the savings rate at the same time that the growth in health expenditures will be putting additional demands on our national resources. Furthermore, by 2020, less than half of the baby boom cohort will have reached 65. Although similar calculations were not made for 2030, rapid growth in the elderly population may bring additional changes after 2020.

The preceding estimates were based on financial assets, but home equity is a major portion of the total bequeathable wealth of the elderly. If the elderly reduce housing equity at the same rate as they dissave out of financial assets, the aging of the population could disrupt the housing market, leading to a fall in the value of the most important bequeathable asset of the elderly.

²⁹ For example, suppose the capital-output ratio were 2 and the saving rate 3.3 percent of GNP. Over 31 years GNP would increase by 66 percent. If the saving rate fell by 0.5 percent of GNP to 2.8 percent of GNP, then GNP would grow by 54 percent, a 7 percent difference. That is, after 31 years, GNP would be 7 percent lower.

Research shows, however, low turnover rates and only modest decumulation of housing until the elderly are well into their 70s.³⁰ Because the leading edge of the baby boom will be just 75 in 2020, there is little reason to expect substantial changes in the housing market, at least by 2020. One study verifies this intuition.³¹ That study modelled both the demand and supply sides of the housing markets, paying particular attention to demographic change. It forecasts that a quality-adjusted index of housing prices will rise from 0.956 in 1990 to 1.018 in 2020, an average increase of 0.2 percent per year. Even after 2020, only modest increases are forecast. The reasons for the moderate changes are: (1) that there appears to be little decumulation by 2020 (at least until people are in their mid-70s) since the baby boom is below the age of much downsizing (that is trading large housing for smaller housing); and (2) that housing supply can adjust to anticipated gradual changes in the housing market to keep price changes moderate. The 0.2 percent per year increase in the quality adjusted index of housing prices indicates that housing prices will remain relatively stable. While this means that, on average, houses will not decline in value, it also implies that houses will not appreciate as fast as they have in the past 20 years. That is, they many not be the financial investment that they were in the past.

While housing prices may remain relatively stable through 2020, after the majority of baby boomers reach their mid-70s (in 2030 and beyond), the picture may change if the boomers begin downsizing. The Panel concludes that increased housing decumulation associated with population aging should not cause much disruption in the housing market by 2020. The Panel did not

³⁰ Data limitations have prevented a better understanding of housing choice at later ages.

³¹ McFadden, Daniel, "Demographic, the Housing Market, and the Welfare of the Elderly, A Preliminary Report on Proposal Research," (Unpublished) MIT and NBER, July 10, 1990.

consider the effects beyond 2020, but recognizes that further changes may occur as the baby boom moves into advanced old age.

The Effect of Population Change on the Foreign Sector

The effect of population aging on the foreign sector and its effect on the United States foreign trade balance was considered by the Panel. While the projections used in the earlier analysis assume that foreign trade is balanced, the United States has been a net importer for many years. Foreigners hold a great deal of debt issued by the U.S. Treasury and by domestic corporations. For example, foreigners currently hold over 12 percent of all U.S. Treasury debt, or about \$405 billion.

Since about 1983, the foreign sector has been accumulating financial assets of the United States and making direct investments in the United States. A rough estimate of the additional holdings by the foreign sector made between 1983 and 1989 can be derived by summing the balance on current account as a fraction of GNP over those years. The sum is 16 percent of GNP. If the real interest rate assumption underlying the forecasts is about the same as the real growth in GNP, this percentage will remain relatively constant even as the economy grows. Of course, holdings by the foreign sector have increased since 1989 and continue to increase because of a continuing negative balance on current account. These holdings represent claims against future U.S. output.

The major developed countries have demographic structures similar to the United States, but they are projected to change more sharply. Table 3.9 shows three measures of the demographic change in the United States, Germany, and Japan.

Table 3.9

**Three Measures of Demographic Structure
1990 and 2020**

	Percent of Population 65 and older		Dependency Ratio*		Financing Burden	
	1990	2020	1990	2020	1990	2020
United States	12.2	16.2	18.5	25.0	100	118
Germany**	15.5	21.7	22.3	33.5	100	131
Japan	11.4	20.9	16.2	33.6	100	138

* The dependency ratio is the ratio of population 65 and older to population 15-64. The financing burden is the ratio of social expenditures to the number of household heads aged 15-64.

** The former West Germany

SOURCE: *Ageing (sic) Populations: The Social Policy Implications*, Organization for Economic Cooperation and Development, 1988.

Germany and Japan will have considerably higher dependency ratios and financing burdens and relatively more elderly than the United States. In fact, Germany's dependency ratios and financing burdens are today nearly what those in the United States will be in 2020. Because of the resulting higher demands on their own economies, holders of U.S. assets may want to withdraw some of their accumulated direct investments from the United States or to convert holdings of U.S. debt to consumption goods. Both will make additional claims on the output of the United States and could make the United States a net exporter of goods and services. Indeed, one

macroeconomic forecaster³² shows net exports stabilizing at about 1.3 percent of GNP after 2010.

What happens to the U.S. balance of trade over the next decade or so should have an important effect. If the U.S. continues to consume more than it produces, with the foreign sector supplying the difference, the total foreign accumulation of U.S. assets could reach 50 percent of GNP.³³ If in 2020 the economies of the foreign sector resemble our forecast of the U.S. economy, they may face shortfalls similar to those indicated under either Scenario A or B. What impact this would have on the U.S. economy depends on the relative sizes of the foreign sector economies to the U.S. economy, and on the rate at which they convert their holdings of U.S. investments to consumption goods. Annual demands for 3-5 percent of GNP, which would seem reasonable under either Scenario, could increase the excess demand or residual under either Scenario A or B by a corresponding amount. That is, the residual under Scenario A, which the Panel estimated to be 16.6 percent of GNP, could be as high as 21.6 percent of GNP and as high as 13.9 percent of GNP under Scenario B, which was estimated to be 8.9 percent of GNP.

³² DRI., *op. cit.*

³³ For example, suppose the balance on current account remained at 2.3 percent of GNP (the average from 1983 through 1989) from 1990 through 2005 and the interest rate on foreign held debt were the same as the rate of growth in GNP. The total accumulation by the foreign sector through 2005 would be 53 percent of GNP, and with no further accumulation it would remain at 53 percent.

Results of Analysis

Based on the above analysis, the Panel made the following observations:

- The projected increase in health care spending is dramatic. The nation cannot continue its current consumption patterns and devote an ever-increasing share of GNP to health care expenditures. Under health spending Projection 2 in Scenario A, the excess, or unsatisfied, demand that would result would be 16.6 percent of GNP; under the lower health spending Scenario B, it would be 8.9 percent.
- The aging of the population, while not a major factor in escalating health care costs under the scenarios, could drive savings rates lower. This could be problematic in that declines in the saving rate will make it more difficult to achieve the growth in GNP projected in both scenarios.
- Housing prices will remain relatively stable over the long term. However, housing, on average, will not appreciate as quickly as in the past and, therefore, may not be as good for investment in the future. The stability of housing prices could change after 2030 when the baby boomers are passing their mid-70s.
- The accumulation of financial assets of the United States, direct investments by the foreign sector, and the demographics of other developed nations may make the excess demand under scenarios A and B even larger. If current trends continue, these factors could increase the excess of consumption demand over national resources under Scenarios A and B by another 5 percentage points.

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- The combination of these factors make it unlikely that the U.S. economy can "outgrow" the increase in health care expenditures. Rather, it seems more likely that the United States will further decrease savings and other consumption items unless the projected growth in health care expenditures is significantly reduced below that projected in either scenario.

The above findings hold under health spending projections in either Scenario A or B. However, the Panel does not believe it is likely that the nation would allow health care expenditures to continue to increase at the high rates embodied in either scenario. As a result, some change is likely in health care financing priorities during this period.

Microeconomic Analysis—Effects on Individuals

The preceding section illustrated that the demographics of an aging population in 2020 and its impact on the economy could be accommodated. However, health care expenditures, if they continue to follow past trends, will demand an undesirable proportion of the nation's resources, with negative consequences for the economy.

This section looks at these same demographic and health care trends from the individual's perspective in 2020. The Expert Panel reviewed the distributional trends of income and wealth of the elderly, the earnings distribution of workers, the implications of financing Social Security and Medicare, the impact of private, out-of-pocket expenditures on the economic well-being of the elderly and the nonelderly, the impact of private insurance expenditures on employers and workers, and the implications of the trends in projected health expenditures on Americans' future access to health care.

Income and Wealth in 2020

Elderly. As the second chapter discussed, elderly income and asset holdings are both expected to increase in real terms over the next 30 years, according to microsimulations prepared by Lewin/ICF with its Projected Retirement Income Simulation Model (PRISM). This model projects an increase in median income of all family units from \$11,770 in 1988 to \$18,760 in 2018.³⁴

The growth in median elderly income largely results from the fact that earnings-related benefits from Social Security and pensions for new retirees are projected to keep pace with the assumed growth in average wages, which grow by 1.1 percent per year under the OASDI Trustees' 1991 intermediate (Alternative II) assumptions.

As table 3.10 shows, the mean income of the elderly, considerably higher than the median, is also projected to increase.

Elderly income is projected to grow somewhat more rapidly than average wages largely because of projections that significantly more of the elderly will be receiving pensions from either private or government employment. As discussed later in this chapter, many uncertainties are associated with projections of whether pensions will be received and what their amounts will be. These uncertainties concern unfunded liabilities of defined benefit pension plans, future levels of pension coverage among active workers, effects of job changes on workers' pension amounts, and the extent to which

³⁴ The 1988 results represent the average of 1986-1990, and the 2018 results, the average of 2016-2020. Five-year averages are used to reduce random variation in the simulation results. For further information and documentation of these simulations of elderly income, see *Future Financial Resources of the Elderly*, prepared for the Advisory Council on Social Security, 1991.

Table 3.10

**Median and Average (Mean) Income
of Elderly Family Units, 1988 and 2018**

	1988	2018	Percent Change	Annual Percent Change
Total Income (1988 Dollars)				
Median	\$11,770	\$18,760	59%	1.5%
Mean	\$18,220	\$26,780	47%	1.3%

SOURCE: Lewin/ICF estimates based on PRISM, October 1991.

pensions in the future will provide cost-of-living increases after retirement.

The PRISM simulations project that pensions from public and private employer plans will increase from 17 percent of aggregate elderly income in 1988 to 25 percent in 2018. Social Security benefits are projected to remain the largest single source of income but decline slightly as a share of aggregate income, from 41 percent to 39 percent. Earnings and income from assets are also projected to decline somewhat as shares of aggregate income.

The elderly are not homogeneous in terms of income. Age and marital status have an important influence. Unmarried women, for example, had a lower median income in 1988 than did unmarried men or married couples. They are also projected to have smaller growth in median income by 2018, as table 3.11 shows.

Table 3.11**Median Income of Elderly Family Units
by Marital Status, 1988 and 2018**

Marital Status	1988	2018	Percent Change
Median Total Income (1988 Dollars)			
All Elderly Family Units	\$11,770	\$18,760	59%
Married Couples	19,760	31,510	59%
Unmarried Person	8,060	11,950	48%
Unmarried Men	9,860	17,480	77%
Unmarried Women	7,760	10,935	41%

SOURCE: Lewin/ICF estimates based on PRISM, October 1991.

The oldest old—those 85 and older—are most likely to be unmarried women, and their median income is less than that of younger elderly. The young elderly—those 65-74—had a median income nearly double that of the oldest old in 1988. (See table 3.12.) The gap between the young old and the oldest old is projected to widen by 2018 (when the young old will include the first part of the baby boom generation). This widening income gap partly reflects the fact that the younger elderly will include more women with substantial work histories. Perhaps more importantly, the young elderly have Social Security and pension benefits linked to more recent earnings levels. After retirement, Social Security benefits are adjusted to keep pace with price

growth (but not real wage growth), while pensions typically are not fully adjusted for price growth.³⁵

Table 3.12
Median Income of Elderly Family Units
by Age, 1988 and 2018

Age	1988	2018	Percent Change
Median Total Income (1988 Dollars)			
All Elderly Family Units	\$11,770	\$18,760	59%
65-74	14,370	23,680	64%
75-84	10,270	16,380	59%
85 and Older	7,680	10,480	36%

SOURCE: Lewin/ICF estimates based on PRISM, October 1991.

The value of elderly asset holdings is also expected to increase over the next 3 decades. However, the distribution of financial resources will remain highly concentrated. The median value of all financial assets (that is, all assets other than home equity, such as savings, stocks, and bonds) is projected to increase from \$2,210 in 1988 to \$7,210 in 2018. Despite this increase in median financial assets, an overwhelming majority (about

³⁵ In the PRISM estimates, projected cost-of-living adjustments (COLAs) in pensions reflect trends observed in the 1980s: 28 percent of private pension recipients are simulated to receive annual COLAs equal to 60 percent of the inflation rate; and three-quarters of State and local pension recipients receive COLAs equal to 57 percent of the inflation rate.

85 percent) of the aggregate financial assets will be held by the elderly in the top quintile of the financial asset distribution. (See table 3.13.)

Table 3.13
Distribution of Financial Asset Holdings
of Elderly Family Units, 1988 and 2018

Quintile of Financial Asset Values	1988	2018
Percent of Aggregate Financial Assets of the Elderly		
All Elderly Units	100.0	100.0
Lowest Quintile	0.0	0.0
Second Quintile	0.1	0.2
Third Quintile	1.0	2.0
Fourth Quintile	9.4	12.7
Top Quintile	89.5	85.1

SOURCE: Lewin/ICF estimates based on PRISM, October 1991.

Nonelderly. Simulations of future income and wealth comparable to that for the elderly are not available for the nonelderly. Projections of average earnings, however, are available under the OASDI Trustees' intermediate assumptions. With assumed real wage growth of 1.1 percent per year, real wages of workers would increase 39 percent over the 30-year projection period. Over the same period, average elderly income is projected to increase by 47 percent. (See table 3.10.) The comparison illustrates the point that average elderly income is projected to increase somewhat faster than the average earnings of all workers.

Data from 1986 indicate that, before taxes, the elderly had slightly less than 58 percent of the income of the nonelderly.³⁶ Mean nonelderly household income was \$34,280; for the elderly, \$19,820. After taxes, however, the gap was smaller: the elderly had 65 percent of the income of the nonelderly.³⁷ The slightly faster growth in elderly income, relative to earnings growth, is likely to narrow the gap.

While projections of the distribution of earnings or of total family income are not available for the nonelderly, analyses of the past two decades indicate a trend toward growing inequality in the distribution of earnings and of family income. These trends have implications for the distribution of income in 2020.

In many ways, the 1980s are characterized as a period of rapidly expanding inequality. Retrospectively, one can see antecedents of this growing inequality in the 1970s, and earlier. Its causes are not well understood. Speculation surrounds technological change and international trade—long-run sources unlikely to vanish quickly. Some examples of these findings of growing inequality follow:

- If men aged 40-65 are ordered by real weekly wages, studies find that between 1973 and 1989 the median real weekly wage rose only 2 percent. The third quartile wage rose 10 percent, and the first quartile wage fell by 9 percent during the same period.³⁸

³⁶ Bureau of the Census, U.S. Department of Commerce, "Household After-Tax Income: 1986," *Current Population Reports, Special Studies, Series P-23*, no. 157 (Washington, DC: US. Government Printing Office, 1988), pp. 22-25, Table 2, and p. 29, Table 3.

³⁷ Substantial changes in the tax code subsequent to this estimate may have altered the difference between pre-tax and post-tax differences.

³⁸ Peracchi, Franko, and Welch, Finis. "Labor Force Transition of Older Workers: Evidence for CPS Data," Unicon Research Corporation, Report 91-08, September 1991

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- Between 1978 and 1988 the income advantage of college graduates over high school graduates almost doubled for men of all ages and increased two-and-a-half times for men in their first 5 years out of school.³⁹
 - Between 1978 and 1988 the income of men in mid-career increased sharply relative to incomes of new job-market entrants.⁴⁰
 - Since the early 1970s, among all full-time year-round workers, wages of men at the ninth decile have increased almost 40 percent relative to men at the first decile of the wage distribution. This increase is only slightly less remarkable if attention is restricted to men of the same age, race, and schooling.⁴¹

All of these findings refer to increasing inequality in wage rates. They are only magnified when the scope of analysis expands to annual income. Wages have always been distinguished by age, race, education, and marital status. Patterns of wage differentials correspond to qualitatively identical patterns of time worked. Group differences in wages correspond to differences in time worked.⁴²

Increasing inequality for women predates the increase for men by decades. In earlier decades, the leading factor was time worked, where differences associated with age and education have been much sharper for women. As

³⁹ Murphy, Kevin M. and Welch, Finis. "Industrial Change and the Rising Importance of Skill," (forthcoming) *Proceedings of Russell Sage Conference*, ed. P. Gottschalk and S. Danziger, 1992.

⁴⁰ Murphy, Kevin M. and Welch, Finis. "The Structure of Wages." (forthcoming) *Quarterly Journal of Economics*, 1992.

⁴¹ Juhn, Chinhui; Murphy, Kevin M.; and Pierce, Brooks. "Wage Inequality and the Rise in Return to Skill," (forthcoming) *Journal of Political Economy*, 1992.

⁴² Welch, Finis. "Participation and Wages," Unicon Research Corporation. Report 90-05, December 1990.

female labor force participation rates have risen, education-based differentials have increased. In fact, participation rates for female high school dropouts have not increased, even for young women. Less than half of young female high school dropouts are employed outside the home, compared to more than 90 percent of young female college graduates.⁴³

For women, as for men, the 1980s resulted in very large increases in the earnings differential between college and high school graduates. The differential among women continues to exceed that among men.⁴⁴

The rising inequality in earnings distributions among men and women separately is magnified among married couples. Studies have found that women are likely to marry men of similar educational attainment. Increases in women's labor force participation patterns have resulted in positive covariances of time worked by spouses—it is increasingly likely that both spouses are working full time, or both working less than full time, or neither working at all. It is reasonable to expect that wages are also positively related; thus increasingly couples tend to comprise two high-earning spouses or two low-earning spouses. These trends toward growing inequality of earnings among men, among women, and among couples suggest growing inequality in total family incomes of households, for which no counter-trends have yet emerged. The persistence of these trends could lead to increased inequality in the incomes of the future elderly as well as among current working families.

⁴³ Murphy, Kevin M., and Welch, Finis. *"Labor Markets in the 1990s: The Rising Importance of Skill,"* Unicon Research Corporation, 1989.

⁴⁴ Murphy, Kevin M., and Welch, Finis. *"Industrial Change and the Rising Importance of Skill,"* (forthcoming) *Proceedings of Russell Sage Conference*, ed. P. Gottschalk and S. Danziger, 1992.

Financing Social Security and Medicare

Some of the increase in workers' earnings could be offset by increases in the cost of financing the Social Security and Medicare programs. The methods chosen to match income and outgo of these programs in the future are likely to affect disposable incomes among workers and the elderly. The following sections briefly discuss the implications for 2020 of financing Social Security and both parts of Medicare—Hospital Insurance (HI) and Supplementary Medical Insurance (SMI).

Social Security. The cost of Social Security as a percent of OASDI taxable payroll in 1991 is 11.1 percent, somewhat less than the combined employee/employer OASDI tax rate of 12.4 percent. The OASDI Trust Fund is thus building reserves, which are invested in U.S. Treasury securities. By 2020, however, the cost of OASDI is projected to rise to nearly 14.0 percent of taxable payroll. Moreover, if current cost projections hold over the next 30 years, Americans of 2020 will be expecting Social Security costs to rise to about 16.6 percent of taxable payroll by 2040. (See table 3.14).

In addition to the OASDI payroll tax, the Social Security program is financed by revenue from taxes paid by beneficiaries on part of their Social Security benefits. Under 1983 legislation, up to half of the Social Security benefits paid to beneficiaries with incomes above certain thresholds count as taxable income under the Federal personal income tax. The revenue from taxation of benefits is deposited in the OASDI Trust Funds and used to pay benefits. It is estimated to equal 0.21 percent of taxable payroll in 1991 and is projected to increase, as the income thresholds above which benefits are taxed are not indexed to inflation. Consequently, more of the elderly will come to have part of their benefits taxed.

In 2020, additional revenue equal to about 1.0 percent of payroll would be needed to finance currently legislated benefits in that year. The OASDI Trust Fund is projected to still have large reserves in 2020. The revenue shortfall could thus be met by redeeming U.S. Treasury securities. To redeem securities, however, Treasury would need funds that presumably must come from either general Federal taxes or borrowing from the public.

In sum, to finance currently legislated Social Security benefits would require additional revenue equal to about 1.0 percent of taxable payroll in 2020. Meeting the annual revenue shortfall with OASDI payroll taxes would require an increase from 6.2 to 6.7 percent for both employees and employers in 2020.

Table 3.14			
OASDI Trust Fund Income and Outgo as a Percent of Taxable Payroll, 1991, 2020 and 2040 1991 Intermediate (Alternative II) Assumptions			
	1991	2020	2040
OASDI Annual Cost and Income as a Percent of Taxable Payroll			
Cost	11.10	13.96	16.58
Income	12.61	12.98	13.15
OASDI Tax Rate	12.40	12.40	12.40
Revenue from Taxation of Benefits	0.21	0.58	0.75
Annual Surplus or Deficit	+1.51	-0.98	-3.43
Trust Fund Assets as a Percent of Following Year's Outgo	82%	387%	40%

SOURCE: 1991 OASDI Trustees Report, Tables 26, 29 and 32.

Table 3.15

HI Income and Outgo as a Percent of
Taxable Payroll, 1991 and 2020
(Health Spending Projections 2 and 3)*

	1991	2020
Income	2.90	2.90
Projection 2		
Cost	2.61	8.94
Surplus or Deficit	+0.29	-6.04
Projection 3		
Cost	2.61	6.37
Surplus or Deficit	+0.29	-3.47

* Projections 2 and 3 are in table 3.1 of this report.

SOURCE: Office of the Actuary, HCFA, October 1991.

The rising cost of Social Security is due almost exclusively to the demographics of an aging population. The rising cost of Medicare, in contrast, is due not only to population aging but also more importantly, to the growth in medical prices and in utilization and intensity of health care services.

Hospital Insurance. Health spending Projections 2 and 3 prepared by the Office of the Actuary, HCFA, for this report indicate that the cost of HI under Medicare will rise significantly by 2020. In 1991, the cost of HI is estimated to be 2.61 percent of HI taxable payroll—which is slightly less than the combined employee/employer HI tax of 2.9 percent. (See table 3.15.) By 2020, however, the cost of HI would be 8.9 percent of taxable payroll—about three times the current HI tax rate—under

Projection 2. Under the slower-growth Projection 3, it would be 6.4 percent—more than twice the current tax rate.

Supplementary Medical Insurance. SMI is not financed by payroll taxes, but if its cost is added to that of Social Security and HI, then the total cost of the programs as a share of taxable payroll would rise between 1990 and 2020 from about 15 percent to about 32 percent (under health spending Projection 2) or to about 26 percent (under health spending Projection 3).

The effect of rising costs on the SMI premium and on general tax payers can be illustrated under the health spending projections. The SMI premium paid by persons enrolled in the program has in recent years been established to cover 25 percent of the cost of the SMI program for the elderly. The rest of SMI costs come from general revenues. Legislation enacted in 1990 specifies SMI premium levels through 1995 designed to continue to meet 25 percent of program costs. With no further changes in the law, the premium after 1995 would increase by the rate of the Social Security cost-of-living adjustments (COLAs)—that is, by price increases.

Table 3.16 illustrates how the projected increase in SMI costs would affect SMI financing by 2018. With no further changes in the law, SMI premium income would fall from 25 percent of program costs in 1988 to 7 to 10 percent of total costs in 2018. Consequently, a much larger financing burden would be borne by general tax payers of all ages.

In contrast, if the premium continued to cover 25 percent of SMI costs, by 2018 it would be about \$1,450 per year (under health spending Projection 2) or about \$1,070 (under Projection 3). These amounts would represent a much larger share of the income of the elderly in the future than they do today. As a share of median elderly income, the SMI premium under

Table 3.16

**Projected SMI Premium Under Alternative Policies
for Adjusting the Premium, 1988 and 2018
(Health Spending Projections 2 and 3)**

	1988	2018 Projections	
		2	3
SMI Cost (in Billions)	\$35.2	\$973.2	\$719.8
SMI Enrollment (in Millions)	28.5	51.7	51.7
Current Law Premium Adjustments*			
Annual Premium Amount (1988 Dollars)	\$298	\$377	\$377
Share of SMI Cost Met by Premium	25%	7%	10%
Premium Set to Cover 25% of SMI Cost			
Annual Premium Amount	\$298	\$1,450	\$1,070
Annual Premium as a Percent of Median Income of the Elderly			
Married Couples (Two Premiums)	3%	9%	7%
Unmarried Persons	4%	12%	9%

* Under current law, the SMI premium would be adjusted by the percentage increase in Social Security cost of living adjustments after 1995.

SOURCE: Office of the Actuary, HCFA, October 1991, for projections in current dollars under health spending Projections 2 and 3 shown in table 3.1 of this report.

Projection 2 would rise between 1988 and 2018:

- from 3 percent to 9 percent of the median income of couples (for two premium amounts), and
- from 4 to 12 percent of the median total income of unmarried persons.

Under the slower growth Projection 3, the SMI premium would more than double as a share of the median income of the elderly.

In summary, the rising cost of health care projected in this report would pose a substantial burden on workers, on general taxpayers of all ages, and on the elderly themselves to finance Medicare at the same time that the cost of Social Security is growing.

Out-of-Pocket Health Care Costs

The rising health care costs portrayed in this report portend significant increases in the burden on employees and employers to pay for private, employment-based insurance as well as for public programs. In addition, out-of-pocket expenditures would place a larger burden on households of all ages. Even though out-of-pocket expenditures are projected to decline as a share of aggregate health spending, (from 20 to 16 percent) they nonetheless represent a significant increase in the burden on individuals because of the overall growth in health spending.

Out-of-pocket spending by households is defined to include payments for deductibles and coinsurance or copayments for insurance-covered services as well as payments for noncovered services, including all health care spending

by the uninsured. These data do not include payments by individuals for insurance premiums, either for private insurance or for SMI under Medicare.

In 1988, the last year for which HCFA estimated out-of-pocket expenditures separately for the elderly and the nonelderly, out-of-pocket spending by the elderly was about four times that by the nonelderly. (See table 3.17.) This relationship is used to estimate out-of-pocket expenditures for the elderly and the nonelderly in 2018. (See table 3.18.)

Table 3.17

**Out-of-Pocket Spending
by Elderly and Nonelderly, 1984**

	All Ages	65+	Under 65
Total Personal Health Expenditures Per Capita	\$1,394	\$4,202	\$902
Out-of-Pocket	389	1,059	265
Percent of Population	100.0	11.7	88.3
Ratio Elderly/Nonelderly for Out-of-Pocket Per Capita		4.0	

SOURCES: For total population: National Health Expenditures, 1984, by Katharine R. Levit *et al.*, *Health Care Financing Review*, Fall 1985, tables 1 and 4. For aged population: Demographic characteristics and health care use by the aged in the United States: 1977-1984, by Daniel R. Waldo and Helen Lazenby, *Health Care Financing Review*, Fall 1984, table 12. For nonelderly population: Calculated from above.

These rough estimates indicate that under Projection 2, direct out-of-pocket spending per person in 2018 would be roughly two-and-a-half times that in

Table 3.18

**Estimated Out-of-Pocket Expenditures
for Personal Health Care Services by Age, 1988 and 2018**

	1988	2018 Projections	
		2	3
Per Capita Out-of-Pocket Expenditures (1988 Dollars)			
Under Age 65	\$345	\$844	\$594
Aged 65 and Older	\$1,380	\$3,376	\$2,450
Per Capita Out-of-Pocket Expenditure as a Percentage of Median Income of Elderly Family Units			
Married Couples	14	21	16
Unmarried Persons	17	28	20
Including SMI Premium:			
Married Couples	17	30	23
Unmarried Persons	21	40	29

SOURCES: 1988 expenditures from National Health Expenditures, 1990 by Katharine R. Levit, *et al.*, *Health Care Financing Review*, Fall 1991. Allocation of out-of-pocket between the elderly and nonelderly based on 1984 data in table 3.16. Estimates for 2018 calculated by deflating 2020 projections by real per capita growth rate, from table 3.1 of 4.1 percent and 2.6 percent by health spending Projections 2 and 3, respectively.

1988, adjusted for inflation. While the growth in per capita amounts is assumed to affect the elderly and the nonelderly equally, the dollar amounts for the elderly are considerably larger because of their higher overall use of health care services. As a share of median elderly income, the estimated

out-of-pocket spending, together with the estimated SMI premium, would amount to about:

- 30 percent of the median income of elderly couples and
- 40 percent of the median income of the unmarried elderly.

For the oldest old, these percentages would be even larger.

While increased out-of-pocket spending has a more significant impact on the elderly than on the nonelderly, the projected growth in the private insurance component of health care spending can be expected to have its greatest impact on workers and employers.

Private Insurance

Like out-of-pocket expenditures, health expenditures paid from private insurance are projected to decline as a share of total expenditures from 33 percent to 29 or 30 percent. (See table 3.4.) Nonetheless, they are projected to grow at a rate much faster than that of earnings of workers. This is true for both health expenditures and workers' compensation. Per capita payments from private insurance are projected to more than triple in real terms under Projection 2, from \$854 in 1990 to \$2,707 in 2020. Under the slower-growth Projection 3, they more than double, rising to \$1,930. (See Table 3.19.) To the extent that private insurance is employment-based, the projections portend significant growth in the share of employee compensation allocated to health insurance—as fringe benefits financed by employers, employee contributions out of wages, or both. The projected growth in private insurance expenditures poses questions about the extent to which

workers in general, and lower paid workers in particular, will continue to have access to health insurance.

Table 3.19
Health Expenditures Paid from Private Insurance,
1990 and 2020
(Health Spending Projections 2 and 3)*

	1990	2018 Projections	
		2	3
Private Insurance Expenditures (in Billions)			
Current Dollars	\$221.8	\$2,806.7	\$2,000.7
1990 Dollars	221.8	866.3	617.5
Per Capita Amount (1990 Dollars)	\$854	\$2,707	\$1,930
Annual Rate of Growth in Real Per Capita Expenditures		3.9%	2.7%

* Based on health spending Projections 2 and 3 in tables 3.1 and 3.4 in this report, prepared by the Office of the Actuary, HCFA, October 1991.

Access to Health Care

Although the Panel was deeply concerned about issues of access to health care in the year 2020, it did not have the ability to forecast the size of the uninsured population. The number of uninsured is particularly sensitive to policy changes in: Federal laws governing Medicare eligibility and employer-based health insurance (such as the COBRA legislation requiring firms to make coverage available to individuals who have lost their jobs) and State

laws governing not only Medicaid eligibility but also other aspects of coverage. Nevertheless, the Panel did review the factors associated with health insurance and concluded that, in the absence of policy changes, the number of the nonelderly uninsured would probably increase by 2020.

A person's willingness and ability to obtain health insurance is related to the person's level of real wage and income, relative to the price of private health insurance and the availability of uncompensated care for persons uninsured. The price of health insurance in turn is influenced by the nature of the covered services, the cost of providing those services, and the administrative cost of operating the insurance. This report uses assumptions which include real wage growth of 1.1 percent per year; real per capita total health care spending, meanwhile, is projected to rise by 4.3 and 3.1 percent, respectively, under Projections 2 and 3. In the absence of policy changes, the Panel anticipates that this difference in growth rates between the real wage and the price of health care may well lead to an increase in the number of uninsured, especially if providers continue to provide uncompensated care under the same terms as at present. This will be realized by the following complicated process:

- people not attached to the labor force will drop or not purchase health insurance;
- some employers (particularly those with predominately low-wage workers) will cease to offer health insurance;
- employers will offer health insurance, but employees will choose not to purchase it; and

-
- an increasing percentage of the work force may be employed on a part-time or other basis that excludes health insurance.

At the same time, in the absence of policy changes, there is no reason to believe that the administrative costs of health insurance will significantly decrease. The price of any health insurance policy is a function of the size of the insured group. For example, administrative costs as a percent of benefit costs range from 40 percent for firms with fewer than four employees, to 18 percent for firms with 50 to 100 employees, to less than 5.5 percent for firms with over 10,000 employees.⁴⁵ We have no evidence that the size distribution of firms will change dramatically between 1991 and the year 2020. Any increase in the number of small firms will most likely result in an increase in the number of people without health insurance (although perhaps not an increase in the percent of the employed population that is uninsured).

Current trends in the market for health insurance, particularly in the small-group market, if sustained, would also lead to an increase in the number of uninsured. These trends include the increase in medical underwriting and in experience rating of very small firms. Both of these trends lead to an increase in the price of health insurance facing higher risk individuals or firms.

Assuming Medicare eligibility remains unchanged, the growth in the proportion of the population aged 65 or older (from 12 to 16 percent) will commensurately increase the proportion of the population eligible for public

⁴⁵ Congressional Budget Office: *Rising Health Care Costs: Causes, Implications, and Strategies*, Congress of the United States, April 1991, p.78.

health care coverage. The growing cost of Medicare may increase pressures to reduce eligibility for or services covered by Medicare.

Summary of Findings

The incomes of workers and of the elderly are projected to increase over the next 30 years.

- The income of the elderly will grow somewhat more rapidly than the wages of workers, largely because of projected increases in pension receipt. The Panel recognizes, however, the many uncertainties associated with projecting the future of pension systems.
- The incomes of the very old, and of unmarried women, are projected to grow less rapidly than that of other elderly family units.
- Growing inequality in the earnings distribution among men and among women in recent decades portend growing inequality in total household incomes.

Public retirement and health care programs will require increased revenue to finance benefits provided under current law.

- The cost of Social Security and both parts of Medicare (HI and SMI) combined is projected to rise over the next 30 years from about 15 percent of taxable payroll to about 32 percent (under Health Spending Projection 2) or to 26 percent (under Health Spending Projection 3).

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- The cost of Social Security is influenced largely by the growing ratio of beneficiaries to workers. By 2020, the annual cost of Social Security will exceed projected annual tax revenue by about 1 percent of taxable payroll.
 - In 2020 the cost of HI as a percent of taxable payroll is projected to exceed revenue by about 6.0 percent (under Projection 2) or about 3.5 percent (under Projection 3).
 - If the SMI premium were to continue to be established to cover 25 percent of SMI costs, it would roughly triple as a share of median elderly income (under Projection 2) or more than double (under Projection 3).

Private health care expenditures are projected to represent a growing burden on households and on employers' ability to provide health insurance to their workers.

- Out-of-pocket expenditures will place a growing burden on individuals in 2020, particularly the elderly, who have much higher out-of-pocket expenditures than the nonelderly.
- Rising expenditures from private insurance will strain the ability of employers and workers to meet the cost of employment-based coverage.
- The Panel anticipates that the projected difference between real wage growth (1.1 percent per year) and real per capita health care cost growth (4.3 or 3.1 percent per year, under Projections 2 and 3,

respectively) will lead to an increase in the number of the nonelderly who are uninsured.

How Much Spending Is Too Much?

The projections of health spending through the year 2020, when coupled with middle projections for Social Security spending, raise a serious question about our ability to support this level of aggregate spending. The projected and the relative size of Medicare and Social Security as a proportion of GNP and the potential payroll taxation needed to finance these programs point to an economy and a social structure very different from the present one. In the past, however, the U.S. economy has gone through equally dramatic demographic and social shifts without showing much strain. One example was the substantial jump in educational spending due to the baby boom. This section considers the reasons why this level of health and pension spending and its accompanying implications for financing will be seen by many as undesirable.

Four distinct but related issues are likely to be raised in considering the desirability of these projected changes. First, there is a "value for money" question: Are the resources devoted to this additional health and Social Security spending providing the greatest value for the recipients? A second area of concern is the impact of this increased health spending on the ability of both workers and retirees to save for the future. Reductions in the level of societal saving ultimately lead to a slower rate of growth for the entire economy. A third major issue involves the hidden costs of supporting this increased spending through higher levels of taxation. Called the "excess burden" of taxation, these costs are the result of individuals changing their behavior, for example, working fewer hours, due to high levels of taxation.

A fourth area of concern is intergenerational equity. The increase in taxation required to support this spending could affect the current political equilibrium between generations. Each of these issues is discussed further below.

Value For Money

There is a fear, if not a strong suspicion, that on an overall basis, increasingly too much is spent on medical care relative to its value in the United States. Furthermore, there is little evidence that continuing growth in real per capita health spending in the United States has resulted in a significant improvement in population health status. Increases in "service intensity," rather than in utilization for hospital and physician services or other changes, underlie this increase. Some critics point to changes in technology as the culprit underlying these intensity changes. Given also the evidence of a significant amount of "inappropriate" use of certain high-tech procedures, they argue that we are not getting value for money.

While acknowledging that there is certainly some waste in our medical system as well as in other markets, it should be recognized that in many cases such waste cannot be corrected without incurring some cost and indeed may not be "correctable" at a reasonable cost. For example, some studies have found that geographic areas or medical practice settings with relatively low utilization rates do not have lower rates of inappropriate use. This suggests the difficulty of correcting waste. Besides that, waste implies that the service is of no value. Waste occurs in an economic sense if the value of the service is not worth the cost.

The simplest solution to the problem of waste is not to stop buying the service altogether—it is to reduce or eliminate the waste. Correcting waste is

not a simple matter for medical care. Besides the problem of identifying waste (since one person's waste may be another person's quality), eliminating it is difficult. For most commodities, obtaining value for money spent is relatively automatic in a competitive market. High levels of spending are self-correcting as the value associated with additional spending on any item tends to decline even though the costs are more or less constant. Hence, the value of other types of consumption which must be sacrificed rises in relative terms. Even when the source of higher spending is some external "inflationary shock," such as increases in the price of gasoline, spending is eventually limited because the transportation provided by gasoline becomes less important, at the margin, than the rent or food budget that would have to be sacrificed to pay for those few extra gallons of gasoline.

An important question in the case of medical care is whether these self-governing mechanisms will emerge. Value for money is automatic in markets when there are many well-informed buyers and sellers with good information who can exit and enter the market easily. But competition, particularly in this ideal sense, is not likely to occur for many medical services. Nevertheless, we would still expect the growth in health expenditures to eventually stop or at least slow down even if deficiencies in competition tend to lead to increases in spending.

It is less clear, however, how this process of limiting and adjusting values will come about for medical care. When medical care takes a larger share of total income (for the nation or for the individual), will we choose to forgo some obtainable beneficial type of care because the value of other consumption that we must sacrifice is too great? Will we make this decision as taxpayers? Will we make this decision as employers buying coverage for workers? Or, will we make this decision as individual consumers choosing among alternative types of health care plans?

Economic logic suggests that limits will be applied through one or more of these mechanisms. But we do not know whether this will yield a long term trend closer to health spending Projection 1 (high growth) or to Projection 4 (slowest growth). Perhaps the best that can be said at this point is that in some fashion, the growth in medical care expenditures must eventually fall to a rate that is much closer to the growth of real GNP if real consumption on other items is to grow. Of course, to the extent that our ability to produce these other consumption items improves, then more growth in health spending can be accommodated.

Savings and Growth

The projected changes in the composition of consumption and public spending may affect the level of saving, and therefore the rate of economic growth that saving would fuel. Medical care expenditures are usually regarded as consumption expenses rather than as investments. Hence, they are not usually seen as contributing to saving and the growth of the economy. There are examples, such as immunizations, that involve a significant investment dimension, in the sense that the benefits from a current expenditure will occur in the future. Increases in consumption through health spending or other means through either public or private spending, may affect the level of overall saving in the economy, and therefore the rate of economic growth.

For the elderly, these future increases in medical care spending are likely to require either reductions in other categories of current consumption, or reductions in their net saving. In particular, high out-of-pocket payments for medical care, as in the case of long-term care, are likely to lead to dissaving as the elderly reduce their wealth. Also, public sector expenditures for either Medicare or for Social Security may affect saving. But their impact will

depend both on the method chosen to finance those expenditures and on how citizens view their future benefits. If individuals perceive such benefits as part of their wealth or savings, then this may partially offset what they might have saved privately in the absence of public benefits in old age. If they save less and the Federal Government runs a budget deficit financed with these trust funds, then there may be a serious negative effect on saving and, ultimately, on the growth of the entire economy.

Hidden Costs: The Excess Burden of Taxation

High marginal tax rates distort economic behavior. This distortion represents a hidden cost that is in addition to the cost of the private sector resources purchased with the tax revenue. In other words, even if the government uses the tax proceeds to provide benefits equal to what the individuals could have obtained with their private expenditures, there is still a cost to society in that people will respond to the taxation by changing their behavior in order to reduce their share of the tax burden. Estimating this hidden cost or "excess burden" is complex, and its size depends on the specific types of taxes used as well as other distortions in the economy.

In the case of the payroll tax, which would have to be increased substantially to cover the projected increases in health benefits, there is considerable room before tax increases that would yield negative additional revenues. Nonetheless, it is likely that, if health spending continues to grow in the aggregate, the methods we use to finance this spending will lead to increased distortions in economic behavior elsewhere in the economy. There are other distortions in the private sector, due to imperfections in both pension and medical insurance markets, that may be offset by public financing of health spending.

At some point, however, the high marginal payroll taxes implied by these projections would seem likely to have serious distortive effects on work effort. Economic estimates of the excess burden of various taxes suggest that these burdens can be substantial. Less formal comparisons across countries indicate that the United States has a relatively low total tax burden overall, particularly for social welfare expenditures. Some countries with higher tax burdens show better economic performance than the United States and others show worse performance. This suggests that, within some limits, there is no simple relationship between a country's economic performance and its tax burden. This observation may, however, lose some of its relevance if the United States moves to the very high levels of taxation indicated under some of the projections presented. At those levels, the excess burden of the taxation and the resulting negative effect of savings could have serious adverse consequences for overall economic performance.

The distortions in labor supply that come from tax and benefit programs come in large part in one of two forms: individuals who choose to stay out of the labor market when it would be more efficient for them to seek jobs and individuals who choose to work a different number of hours than would be efficient. There are a host of other distortions associated with these two, such as choices about labor supply, investment in education, and choice of a career. In addition, the structure of tax and benefit provisions affects the incentives of firms when choosing whether to have fewer higher paid workers or more lower paid workers. The source of the distortions comes from the individual receiving only the after-tax return from work, or more work, while society also receives the increase in tax revenue that comes from more work.

This description makes it clear that there is a deadweight burden that comes from the provision of benefits that are restricted to the poor, in addition to

the deadweight burden from the taxes used to finance those benefits. Thus, if going to work means giving up government-provided health insurance benefits, there is a deadweight burden. If going to work implies receiving a smaller subsidy for the purchase of health insurance, there is a deadweight burden. If a firm finances employer-provided insurance by reducing wages by a uniform percentage amount (rather than as a lump sum), there is a deadweight burden. Thus, the important distinction in measuring deadweight burden is not whether the funds flow through the government but how the change in net benefits is affected by working or doing additional work. The critical elements in the size of deadweight burden are the cost of health benefits widely provided and the design of the eligibility and tax institutions. Whether the total money flows through the government or not is not indicative of the size of the deadweight burden.

Although the scenarios discussed above assume a continuation of current programs and their substantial public sector financing of these levels of health spending, it is possible that a greater level of private sector financing could be utilized. This raises the question of the potential impact of such funding on private sector economic performance. In the long run, high payments for private pension or post-retirement medical benefits will eventually be borne by workers. If these costs are borne by workers as "fringe" benefits, then their impact on worker behavior depends in a complicated way on how workers respond to different packages of fringe benefits versus wages.

In the end, it seems likely that it is not so much the distortions caused by the *method* of financing high levels of social welfare expenditures but rather the *high levels* of costs themselves that lead to substantial distortion. The obvious, but important, policy implication is that we should seek to finance those benefits in the least distortive way, whatever that may be. The more

painful message is that, even when the distortion is as low as possible, the addition of these hidden costs to the real resource costs of these benefits may mean that, in some fashion, the level of benefits must be re-evaluated prior to 2020.

Intergenerational Equity: The Political Equilibrium

The projected high levels of health spending and associated tax financing are and will continue to be an issue for the political process, especially as considerations of equity and self-interest increasingly influence that process. There is little doubt that the payroll tax on the working population in the future needed to meet the projected cost of these retiree benefits is substantially greater than the payroll tax that the retirees themselves had paid when they were working. Although the relative numbers of elderly will rise substantially, workers will remain the dominant political bloc. At some point, workers may simply judge that, relative to the benefits they expect to receive when they retire, payroll taxes are too high.

In the past, the reasons the nonelderly have supported the Social Security and Medicare systems included concern for one's parents or for elderly persons in general and the expectation of similar levels of benefits upon retirement. But there is likely to be a limit to this support if its price becomes high enough. By some measures the elderly are currently as well off as (or better off than) younger taxpayers. Eventually, this may lead taxpayers to feel that it is inequitable for them to pay high taxes to support transfers to the retired baby boom generation.

Any discussion of these issues is, of course, highly speculative, since both the fact and perception of intergenerational equity and workers' views about public retirement benefits are poorly understood. Anything could happen, but

the higher the taxes leveled on workers, the more likely they will question their support for high benefits for retirees. Such discussions take place now in major union bargaining because the cost of retiree pensions and medical benefits reduces the potential funds available for employee wage increases.

Health Care in 2020

The importance of the aging of the population, health care price inflation, and the intensity of service delivery with respect to health care projections for 2020 were highlighted earlier in this chapter. In general, the projections indicate that despite the substantial aging of the population that is to occur by 2020, aging plays a relatively small role in contributing to overall cost escalation. Utilization, intensity, and health care price increases, on the other hand, are significant contributors. This section discusses the implications of the rate of growth of health care in more detail. It also anticipates what cost control features of today's system might continue into the future. This section concludes with some observations about long-term care in 2020.

The Importance and Implications of the Rate of Growth

Some factors that contribute to the growth of health spending, such as population growth and general inflation, are not easily influenced by public health policy. With respect to the rate of growth, the most significant factor internal to the medical care system that policy analysts believe responds to changes in health policy is the growth in the rate of intensity and utilization of health services.

In this respect, it is important to recognize the distinction between the level of health care spending and the growth of health care spending. If we could

eliminate the use of services that are currently of minimal benefit compared to their cost, then the current level of health spending could be reduced. However, this would not necessarily reduce the rate of growth of health spending, as there is no reason to assume that increases in health spending are of minimal benefit.

Indeed, many current proposals and initiatives, from practice guidelines to increased managed care, may have more of an impact on the level of spending than upon its rate of growth. The long run impact of this might be minimal. As an illustration, consider a policy enactment in the 1990's that achieves the goal of no real increase (that is, no medical inflation or growth in intensity or utilization) for one year. In the subsequent year, growth rates resume their normal patterns as characterized by Projection 2. By 2020, the GNP share would be reduced only to 30.1 percent, instead of the 31.5 percent now projected.

Underlying Reasons for the Rate of Growth in the Health Care Costs

To address the issue of the long-term growth in health spending, it is necessary to understand the factors underlying the growth in intensity and health care prices. Although experts would generally agree on the list of factors affecting intensity, there would be much less consensus on their relative importance, especially for policy purposes. Broadly speaking, two interdependent factors are most often emphasized: technological change and insurance coverage.

The rapid rate of growth in the cost of health care is partly a result of the incentives facing key participants in the health care system. Those whose income and/or profits are related to improved quality care (drug

manufacturers, producers of high technology diagnostic equipment) or additional services (physicians, hospitals) in the past have been rewarded for providing quality-enhancing—often cost-increasing—services. Patients whose care is primarily paid for through third-party payers have little incentive to control costs. Technological change and insurance are major contributors to the rise in costs, although obviously not the only ones. Only if some of these underlying incentives are modified in fundamental ways are significant changes in the rate of growth in health care services possible. The effect of efforts to change incentives is not always clear. For example, experience with health maintenance organizations (HMOs)—which have incentives for providers to control costs—shows that after an initial reduction in costs, their rate of growth in premiums is as fast as that in fee-for-service payment plans.

The importance of technological change in the health sector is evident to the most casual observer, as each day we are bombarded in the media with information on new drugs, devices, and procedures. More subtle changes in the organizational structure and delivery of medical services (such as HMOs and increasing specialization) are no less important and certainly more pervasive. Measuring with any precision the relative impact of either the hundreds of small technological changes or the more broad systemic changes is extremely difficult. Furthermore, attempts to distinguish among these types of changes have met with little success. The best estimates indicate that a major share, but not all, of the changes in intensity might be attributable to technological change.

Some have long argued that expansion in the extensiveness of third-party reimbursement of health care costs, including private insurance, tends to reduce the incentive for patients and their physicians to be cost-conscious in making decisions about the use of medical services. They have also argued

that the nature of our governmental subsidies to promote the purchase of health insurance tends to exacerbate this tendency, particularly if these subsidies promote the use of a low level of copayments, which, in turn, leads to increasing utilization. This results in a trade-off between higher insurance premiums and the cost of additional services of relatively low benefit.

The consequences of these incentives for technological change in a dynamic and changing economy are complex and not fully understood. It seems likely that the developers of new technologies are aware of the relative lack of price sensitivity in this market and the openness to improvements in the quality of service or amenities provided. Hence, there is a strong incentive to develop technologies that improve perceived quality (such as better diagnostic testing) despite increases in cost. The incentive to produce cost-decreasing technologies is much more limited because providers do not currently compete extensively on the price of health care services. In addition, insurance insulates consumers from the full price effect of utilizing high-technology services, although the effects are eventually passed on to all consumers indirectly in the form of higher premiums, stricter utilization controls, or medical underwriting. Despite the lack of incentives to develop cost-reducing technology, there have been dramatic successes—the Salk vaccine, for example.

Despite these gaps in our understanding, it is clear that attempts to limit the projected increases in health spending will need to address the factors that underlie the *growth* in health spending, particularly the rate of technological change.

The evolution and availability of technology are essential ingredients in the determination of future levels of health care quality and cost. Similarly, incentives or controls on the availability of suppliers can have long-term

consequences, affecting the numbers of doctors, hospitals, laboratories, or expensive diagnostic equipment. It is natural to consider the determinants of what is potentially available (e.g., technology) versus the availability of supply. Incentives to control supply directly may be an issue in institutional design aimed at controlling costs and quality. The issue of the direction of technological development is a separate and important question that is considered here.

Incentives for technology development come from two sources. Government support of research and development is either through direct grants or financial incentives provided through the tax code. In effect, the rest of the world benefits from our successful products which are subsidized by U.S. Government investment in research.

The second source of incentive for technological development is the anticipated future profitability of successful innovation. The way in which we organize and remunerate the medical care supply affects the anticipated profitability of research and development. In particular, it is important to recognize that the current system generates a demand for the fruits of research and development that is very quality-sensitive, but not very cost-sensitive. This naturally focuses the energy of researchers on higher quality innovations rather than cost-saving innovations. As we attempt to control or at least influence the future course of health care spending, it will be critically important to keep in mind these incentives for research. If a more price-sensitive medical marketplace evolves, greater incentives would be provided for cost-reducing innovations. This can be achieved by methods that shift demand to lower-cost options.

Besides the incentives for cost-increasing research and technological innovation in health care, there are also other fundamental economic forces

that affect the relative cost of medical care. In particular, historical experience suggests that the goods sector of the economy experiences more rapid cost-reducing technological change than the service sector. For instance, technological advances in agriculture have resulted in more food being produced with fewer agricultural workers and at lower cost. In contrast, technological changes in the health care sector have resulted in more services being available, at the same time usually requiring more manpower (often more sophisticated manpower), resulting in greater costs. New technology also often provides an improved diagnostic or therapeutic capability rather than a cure for a disease, thus adding to, rather than reducing, health care costs.

Considerations for Reducing Rate of Growth

To the extent that the growth in costs is attributable to continued growth in the complexity and unit cost of care, controlling costs will mean controlling the growth of technology, certainly those technologies that do not truly save money. Most medical technologies seem to fit this description.

There are two types of cost control approaches. One will achieve one-time savings; the other will slow the rate of increase. The two are not incompatible and the strategy adopted should include elements of both. In the first category are reducing administrative costs and eliminating inappropriate care. Although some estimates may be high,⁴⁶ some significant saving could be achieved by eliminating excessive or inappropriate services and reducing the marketing costs of the health care financing and delivery

⁴⁶ Wollhandler, Steffie, and Himmelstein, David. "The Deteriorating Administrative Efficiency of the U.S. Health Care System," *The New England Journal of Medicine*, May 2, 1991. U.S. General Accounting Office. *Canadian Health Insurance: Lessons for the United States*, HRD-91-90, June 1991.

system. Likewise, better monitoring of care (through guidelines or other devices), both proactively and retroactively, may achieve savings.

The major threat, however, is continued growth. There are several strategies to stem the rate of growth, some more direct than others. One option is to ration care, either at the unit-of-service level or en masse. Unit-level rationing addresses issues of what will be included in benefit packages, much as is currently going on with Oregon's proposal for defining eligible benefits under Medicaid.⁴⁷ Another approach places caps on the amounts to be spent overall—for example, by negotiating a prepaid, capitated rate. In that situation the rationing task is shifted to a smaller, perhaps less politically vulnerable, organization. A third approach is to stimulate investment in research and development of cost-reducing technologies, including investment in the prevention or cure of costly disabling conditions.

Limitations on the growth of new technology can be achieved in various ways. One can require that any new technology be used only in approved franchises that are part of randomized trials to establish the efficacy of the treatment before it is widely adopted. Some argue that such a step will restrict innovation and prohibitively raise the costs of product development. One can reduce the current levels of governmental support for research, which could reduce the overall health of the population relative to what it could have been. At present, the Federal Government supports much of the basic and clinical research that eventually leads to new treatments at greater costs. Defenders of research suggest that it may lead to solutions for chronic

⁴⁷ The State of Oregon proposes to override standard Medicaid eligibility categories and, instead, establish one category based on income. The newly defined eligibles would be entitled to a set of benefits that have been prioritized based on value. A cut-off point is established based on affordability to the State. Benefits below the cut-off point would not be covered. The proposal must be approved by the Health Care Financing Administration.

problems and generally represents a public good. One can reduce the supply of persons and institutions needed to deliver the technologically expensive services. Government funds now support training of physicians, especially at graduate levels where specialization is technologically linked. Training fewer physicians overall, or fewer in technology-intense specialties, may reduce costs.

In situations where there is a single payer, or even a dominant payer, one can designate regional centers as the only places eligible for reimbursement of the cost of sophisticated procedures. Canada has done this with a variety of regional centers. Medicare has attempted it with heart transplants. One could reinstate programs like "certificate of need" to control the supply of technological services, but that program was not initially successful and even more ways around it have been developed since. Most of these strategies will require some time to show any effects, if they work at all.

A more direct approach would be to remove the current subsidies for using technology. A general reduction in the favorable government tax treatments for health care and health insurance would provide a general brake on use of intensive and expensive care, but it might also enhance the disparity between the rich and the poor, or more accurately between the rich and the near-poor, because the poor would still be covered by Medicaid. Eliminating the current tax subsidy to high-wage workers might narrow the disparity between the rich and poor.

At this stage in our society's advanced technophilia, effective remedies will require a broad therapy that includes both consumers and providers. The financial advantage of providing technologically sophisticated care needs to be removed, along with at least some of the protection against cost to the consumer.

Health System Trends

In addition to focusing on the rate of growth in health care spending and changes in health financing, the Expert Panel considered other major, evolving trends in the health system that are likely to affect how the system will look in 2020.

Between now and 2020, the Panel anticipates significant changes in the way the financing and delivery of health care services are organized. These changes will be influenced by explicit policy decisions that are made at various levels of government, as well as by the private sector, to address the significant problems facing the health care delivery system.

Cost Control Mechanisms. The Panel expects several trends to persist over the next 30 years. These include: (1) the increased use of cost sharing as a mechanism to control costs of insured populations; (2) the expansion of managed care and utilization review; (3) the spread of direct price negotiations between third-party payers and providers; (4) the development of direct care providers to render services to targeted populations; and (5) increased efforts at public education to promote lifestyles more conducive to good health. While there is little conclusive evidence about the effectiveness of these mechanisms, developed primarily to help control costs, they have begun to influence our view of medical care. Today's view is quite different from the way we would have approached this 20 years ago.

Increased Cost Sharing. The Panel expects that cost sharing will continue to be used to control employer costs and to contain overall costs. While many employees may continue to be protected against most catastrophic expenditures, their out-of-pocket expenditure liability will increase. Third parties may develop more sophisticated cost sharing strategies, in which cost

sharing is higher for relatively discretionary services and lower for those that are more basic.

Managed Care and Utilization Review. Health services researchers and policymakers have recently focused a great deal of attention on ways to determine and achieve the provision of appropriate and efficient care. Research results will be used to establish clinical guidelines for the delivery of services and monitoring utilization patterns. The Panel expects progress to be made over the next three decades in determining whether services are appropriate (i.e., benefits outweigh risks) and efficient (i.e., benefits exceed costs).

Direct Price Negotiations. The Panel expects that information documenting the quality of care rendered by different providers will be increasingly used by third party payers as they negotiate with providers to deliver services to the covered population.

Direct Care. As indicated earlier, there are significant segments of the population for whom access to care is a major concern. One mechanism for increasing access is the development of direct care providers, i.e., the creation of neighborhood health centers supported by public funds and staffed by physicians and other health professionals who are part of a national health services corps. Although this direct service approach waned in the 1970s and 1980s, the Panel expects that the recent surge in policymakers' interest in this option will continue into the 21st century.

While these trends are laying the foundation for the types of controls that will exist in the year 2020, countervailing forces also exist. These include the use of the courts and the political process to moderate the impact of cost-

control mechanisms and to tap resources for certain groups of patients and providers.

The courts will influence decisions in ways that are difficult to predict, but which may limit the choices available to policymakers to control costs. Providers, for example, have successfully challenged the payment levels established by State Medicaid programs. Individuals have successfully sued insurance companies to pay for experimental services. In the future, the courts could make it increasingly difficult to implement management review procedures.

Specific patient interest groups representing individuals with a variety of health problems (e.g., AIDS, breast cancer, Alzheimer's disease) have become active in ensuring access to services. Provider groups and purveyors of medical technology will continue to use lobbying tactics to obtain more resources for their members. The success of these lobbying efforts may make it increasingly difficult to engage in actions to restrain the increase in health care costs.

Long-Term Care

In contrast to the health care system in general, the projected growth in long-term care expenditures is strongly influenced by the growth in the number of Americans who reach advanced old age. HCFA's projections of the nursing home component of national health care expenditures reflect the influence of population aging that will have begun by 2020, as well as growth in expenditures due to other causes. As shown in table 3.20, real nursing home expenditures per capita, after adjusting for overall inflation and size of the total population, grew at an average annual rate of 5.6 percent in the 1970's and 4.4 percent in the 1980's and are projected to grow over the next 30

Table 3.20

Nursing Home Services*

**Components of Rate of Growth in Expenditures
Actual for 1970-1980 and 1980-1990 and
Projections 2 and 3 for 1990-2020
(Average Annual Growth Rates)**

	1970- 1980	1980- 1990	1990-2030	
			2	3
Total Nursing Home Expenditures	14.4	10.1	9.4	8.3
Real Per Capita**	5.6	4.4	4.5	3.4
Nursing Home Prices	0.4	1.3	1.0	0.7
Utilization (Days Per Capita)	3.1	0.2	0.9	1.0
Population Composition	2.1	1.4	1.1	1.1
Other	0.9	-1.2	-0.2	-0.1
Intensity (Cost Per Day)***	2.0	2.9	2.6	1.8

* Excludes intermediate care facilities for the mentally retarded.

** Total growth adjusted for general inflation and population size.

*** Residual that includes cost per day other than prices.

years at an average annual rate of 4.5 percent under Projection 2 or of 3.4 percent under the slower growth Projection 3. This growth has three components: growth in nursing home prices (in excess of general inflation), increased utilization (measured as nursing home days per capita), and increased intensity of nursing home costs per day.

The growth in nursing home prices in excess of the overall rate of inflation occurs, in large, as a result of growth in the wages of nursing home employees, a large component of nursing home costs. In these projections, their wages are projected to keep pace with the real wage growth assumed for workers in the economy in general (1.1 percent). Growth in nursing home prices in excess of inflation is expected to continue at an average annual rate of 0.9 or 1.0 percent in the long-term projections of nursing home expenditures.

Increased utilization of nursing home care—i.e., increased nursing home days per capita—is due exclusively to the aging of the population and accounts for average annual growth of about 1 percent under both Projections 2 and 3. (See table 3.20.)

Intensity represents the residual of all other causes of increase in nursing home costs per day in excess of than that explained by a fixed set of labor and nonlabor inputs for a day of nursing home care. It captures the effect of more intensive nursing home services, either for post-acute care, as patients are discharged more quickly from hospitals to nursing homes for recuperation, or for more intensive chronic care, as more of the less severely impaired individuals opt for care in the community, leaving a more severely impaired population in nursing homes.

Several factors distinguish long-term care from acute care:

- Demographic changes, especially growth of the very old (those aged 85 and older), will account for about a doubling in the projected use of long-term care. This forecast, like virtually all others, assumes no change in the age/sex-specific rates of disability among elderly persons.

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- Long-term care is less technologically intense than acute care; however, its intensity costs are rising as well, as table 3.20 shows. This pattern of increase may stem from continuing demands for more professional staffing and from a change in patient composition toward a greater percentage of severely disabled persons. A larger proportion of persons in today's nursing homes are impaired in multiple activities of daily living (ADLs) than was the case 15 or even 10 years ago. The nursing home of 2020 can be expected to care for even more disabled persons.
 - The distinction between acute and long-term care has been reduced by changes in the way Medicare reimburses hospitals. The Prospective Payment System incentives have created an expanded post-acute care industry in which institutions and agencies designed for long-term care now provide what was once considered acute care.
 - In contrast to acute care, long-term care—especially nursing home care—is not highly desired. There is a strong barrier to its use created by the nature of the service.

The bulk of long-term care recipients will be those who suffer from chronic dependencies in their capacity for self-care; many will reach this state because of dementia, others because of assorted physical maladies. For the latter, and a portion of the former who still retain the capacity to respond to their environment, the distinction between institutional and noninstitutional care is less relevant. The goal of long-term care will be to provide supportive services in a setting that preserves the individual's sense of identity and self-worth. For many, that will be one's own home, but for those who need housing, it will mean providing some form of residence to

which services can be brought. To the extent that this housing can be more communal, the cost of providing these services will be reduced.

Current policies rely on separate approaches to home care and nursing home care. The latter is viewed as a means to provide care and shelter, although in a form not attractive to many. The result of this approach has been a continued search for alternatives to nursing home care, a pursuit that has proven less successful than many had hoped. Future development in long-term care may be able to avoid this difficulty by focusing attention on providing services to those who need them but avoiding the simultaneous responsibility for providing housing.

Estimates of future nursing home use are based on the assumption that current nursing home usage rates will prevail in the future. As a recent GAO report noted,⁴⁸ however, it is difficult to assess the validity of this assumption because those usage rates are sensitive to State policies, including the degree to which States control the growth of nursing home beds and reimbursement rates. Large declines in nursing home beds in some States may continue in the future. It is also possible that the large increases in demand may overwhelm State attempts to control nursing home supply. Nursing home usage rates may also depend upon the degree to which people purchase private, long-term-care insurance to cover the catastrophic expenses of institutionalization. One recent study indicates that by 2018, private long-term care insurance might be purchased by 25 to 54 percent of the elderly and might account for 7 to 17 percent of total nursing home expenditures,

⁴⁸U.S. General Accounting Office, *Long-Term Care: Projected Needs of the Aging Baby Boom Generation*, 1991

which may reduce Medicaid expenditures by 1 to 16 percent, compared to what would have been spent without private insurance.⁴⁹

The growing disabled population living in the community will generate demand for both formal and informal care. Formal care usage will depend, in large part, upon the degree to which family caregivers continue to provide unpaid care to disabled elders. The next generation of elders will have more children available to take care of them. Further in the future, however, the more recent decline in fertility rates will reverse this trend. Future generations may also have a different propensity to rely on informal care. Higher incomes of the elderly population may increase their demand for paid care. Continued increases in female labor force participation, which increase the potential conflict between work and caregiving, may reduce the extent to which women are caregivers. On the other hand, to the extent that they are not offset by delayed childbearing, smaller families of potential caregivers and increased active life expectancy of parents may reduce the conflict between child care and elder care.

Demographic changes through 2020 will have a more profound effect on Medicaid expenditures than on Medicare, because the former covers the bulk of long-term care costs, whereas the latter is more likely to share the technology-driven fate of acute care. Although there is reason to expect that older persons by the year 2020 will have more pension income, the group generally least well off is also the group at greatest risk of needing long-term care—the oldest old. Although Medicare is not a prominent source of long-term care support, changes in hospital reimbursement policies have encouraged greater use of long-term care facilities as a source of post-

⁴⁹Weiner, Joshua M. and Raymond J. Hanley. "Long-Term Care Financing: Problems and Progress", *Annual Review of Public Health*, 12: 67-84, 1991.

hospital stays. Future hospital stays will be shorter and more intense, placing a greater burden on post-hospital care resources, including nursing homes, which may become true convalescent care centers. It is already true, and likely to become more so, that acute and long-term care are inextricably linked. Persons needing long-term care tend to need more acute care, and most long-term care careers begin with an acute episode, often involving a hospitalization. Methods for more closely integrating, or at least coordinating, these two types of care, organizationally and financially, seem indicated.

Future Risks and Uncertainties: Health and Pension Systems

Today's elderly have benefited from the development of Social Security, Medicare, and employer-sponsored pensions. Consequently, elderly Americans have significantly lower poverty rates and higher real incomes than was the case three decades ago. Projections into the future suggest that the elderly will continue to experience real gains in income, in large part because their incomes from Social Security and pensions are projected to reflect real growth in earnings and because more elderly are projected to receive pension benefits in addition to Social Security.

While the Panel finds these projections reasonable, it nonetheless believes it is important to consider the uncertainty, or risk, associated with the public and private institutions on which the elderly are expecting to rely in the future.

In considering how to provide for income security and health care financing over the next 30 years, many risks can be identified. Among the more

significant risks that affect the expected income and the accumulation of wealth are:

- deterioration in expected asset value (e.g., due to change in economic markets or in interest rates);
- deterioration in the real value of income (e.g., due to inflation);
- failure of financial institutions;
- tax law changes; and
- broken promises (e.g., the promise of a certain level of benefit from a defined-benefit pension plan).

Two important questions raised by the existence of such risks are:

- How can they be minimized?
- Who should bear them?

Government, employees, and individuals can all directly affect these risks. For example, Government policy can affect these risks by affecting interest rates and inflation, by regulating financial institutions, by changing tax laws, and by regulating pension plans. Employers can affect these risks by their business practices (e.g., minimizing debt, controlling expenses, funding employee benefits). Individuals can affect these risks by their saving practices.

Ultimately, all these risks are borne by individuals. The portion that each individual bears, however, is affected by how risks are allocated across different aggregations of individuals.

The next sections highlight the risk of broken promises, and in the process provide some additional discussion on what the risks are and who bears them.

Public Systems

In reviewing public institutions, the Expert Panel considered the projected status of Medicare and Social Security in 2020. The long-range financial status of these programs has also been reviewed by the Boards of Trustees of the OASDI, HI, and SMI Trust Funds and the two Technical Panels appointed by the 1991 Advisory Council on Social Security: the Social Security Technical Panel and the Health Technical Panel. For the discussion below the Expert Panel relied primarily on the projections contained in the reports issued by these groups.

Social Security: Old Age, Survivors, and Disability Insurance. Both the Trustees and Social Security Technical Panel concluded that the OASDI Trust Funds will remain financially solvent well into the 21st century. The combined OASDI Trust Fund is projected to be solvent well beyond 2020. It, however, is not in balance over the full 75-year period for which projections are made.

The Trustees applied a test of long-range actuarial balance over the next 75 years (1991-2065). Using intermediate (Alternative II) assumptions, the OASDI program meets the test of long-range balance for projection periods from 1991 up to 57 years in length, but fails to meet the test of long-range

balance for the 58-year period from 1991 and through all subsequent periods. The Trustees also report that the fund ratio (relationship of assets to disbursements) peaks in the year 2015 and declines thereafter until funds are exhausted in 2041.

Medicare: Hospital Insurance and Supplementary Medical Insurance.

Medicare does not fare as well as Social Security in terms of its long-range financial soundness. Because of different funding methods, the HI Trust Fund (with revenues primarily from payroll taxes) and the SMI Trust Fund (with income primarily from premiums paid by beneficiaries and general revenues) are currently subject to different tests of actuarial soundness and projection periods.

Using intermediate assumptions, the Trustees report that the HI Trust Funds will approach a deficit in 2005. (Using more optimistic assumptions, the HI Trust Funds will not be exhausted until 2018. The more pessimistic assumptions show the depletion of the Trust Funds in 2001.)

For SMI, the primary test involves a ratio of assets (end-of-year surplus or deficit) less liabilities to the following year's incurred expenditures. Currently, no long-range projections are made. The Trustees conclude:

The financing established through December 1991 is sufficient to cover projected benefits and administrative costs through that time period. Although the SMI program is actuarially sound, the Board notes with concern the rapid growth in the cost of the program. Growth rates have been so rapid that outlays of the program have nearly doubled in the last 5 years. For the same time period, the program grew 37 percent faster than the economy as a whole. This growth rate shows little or no

sign of significantly abating despite recent efforts to control the cost of the program.

The Health Technical Panel recommended that long-range projections be made for SMI and HI on a compatible basis so that policy makers and the public can more clearly see the long-range commitments of the total Medicare program. The Health Panel noted:

Medicare faces serious financing problems, particularly early in the next century. The retirement of the baby boomers—between about 2010 and 2030—and the subsequent movement of the baby boomers into advanced old age will place a growing demand on the national resources needed to finance health care for the elderly.

To maintain the projected level of Medicare benefits under current financing methods would require substantial additional revenue, both from general revenues for SMI and payroll taxes for HI. The Health Technical Panel also looked at the burden on future beneficiaries of the projected growth in Medicare and total health care costs. It estimated that if the SMI premium continued to represent 25 percent of SMI costs, by 2020 the premium would increase to \$310.50 in current dollars, in contrast to the 1991 SMI premium of \$29.20. This premium would represent 13.3 percent of the Social Security benefit payment for an average retiree in 2020.⁵⁰

The Expert Panel notes that the growth in health costs that underlies the growth in Medicare costs means that health costs not financed by Medicare will represent a growing burden for the elderly. Today, Medicare pays for

⁵⁰ These estimates are based on the Alternative II-B assumptions in the 1990 HI Trustees report and differ somewhat from other estimates in this report based on health spending Projections 2 and 3.

about 45 percent of the elderly's total health care costs (including long-term care), while Medicaid and other public programs pay for 16 percent, and private insurance and out-of-pocket spending account for 37 percent, as discussed earlier in this chapter. Future retirees may face an increased drain on their own resources for deductibles, copayments and services not covered by Medicare, such as long-term care and prescription drugs.

Changing Economic and Political Circumstances for Social Insurance. In considering whether the promise of Medicare and Social Security will be fulfilled in 2020, the Expert Panel notes that the factors underpinning the political climate in which these programs were established and in which they continue to be modified have changed considerably.

Legislation for Social Security, passed in 1935, came about in an era when the elderly were not as financially secure as they are today. Social Security was envisioned as a source of income during retirement years that would help the elderly maintain an acceptable standard of living beyond the working years. The passage of Medicare in 1965 was also directed at improving the security and well-being of society's elderly.

Wealth and demographic patterns have changed since the enactment of these programs. Poverty has been diminished, in large part because of the social insurance programs. In 1959, 35 percent of the elderly were in poverty. Over the past 30 years that rate of poverty for the elderly has been decreased nearly two-thirds, to 12 percent, a rate below the overall national average of 13.1 percent. The elderly today are well-off compared to earlier generations and are expected to slightly increase their income position into 2020. However, it must be pointed out that this general sense of well-being of the elderly is not applicable to all subgroups. The old elderly and elderly women living alone will still be particularly vulnerable to poverty.

During the upcoming decades, the burden on the public budget may also shift. Medicare and Social Security represented 28.3 percent of Federal budget outlays in 1990. If you assume that in 2020 the Federal budget constitutes the same share of GNP as in 1990, these two programs could conceivably represent 47 percent of the Federal budget in 2020.

This Panel anticipates that the 2020 retiree will be able to continue to rely on Social Security as an important source of retirement income. However, the rapid growth in health care spending and the projected insolvency of the Medicare program may result in a very different Medicare program for retirees in 2020.

Private Systems

Pensions. In considering the stability of private pension institutions, the Expert Panel reviewed projections of income of the elderly in 2020, which point to several important trends that will influence the economic well-being of the elderly in 2020.

- Over the past 25 years, the extent of private pension coverage has remained widely stable. In 1988, 44 percent of all U.S. workers were included in employer-sponsored pension plans.⁵¹ Despite some evidence of a slight decline in coverage during the 1980's, the level of availability of pension coverage is assumed to remain constant through 2020.

⁵¹ John R. Woods, "Employer-Sponsored Pensions: Receipt, Coverage, and Vesting," unpublished data in *Briefing for the Advisory Council on Social Security*, Office of Research and Statistics, Social Security Administration, September 1990.

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- In 1988, 40 percent of the elderly received pensions. The proportion receiving pensions is projected to increase in 30 years to nearly 77 percent. This increase reflects a maturation in the pension system and factors such as the increased labor force participation of women and the liberalized rules for vesting.
 - Pensions as a share of income of the elderly are projected to increase over the next 30 years. In 2020 pensions are projected to represent 25 percent of income, up from 17 percent today.

These projections indicate that the elderly in 2020 will rely on pensions as an important contributor to their economic well-being. This positive finding is tempered by various uncertainties about the future of private pensions. It should be noted, for instance, that the assumptions on which these projections were based do not (and perhaps cannot) take into account the degree to which pensions are under-funded.

Economic changes may affect the value of pensions and thus the adequacy of the income for the elderly. The value of pensions may be eroded in several ways. When a worker leaves a job with a vested right to a future pension, that future pension usually does not keep pace with changes in wage or price levels between the time the worker leaves the job and the time the pension is actually paid. Consequently, a mobile worker who earns pensions on a series of different jobs over a lifetime will have far less in pension benefits than a worker with continuous service in one pension plan. Pension value for the mobile worker may also be affected by the lack of portability of most pensions. Thus mobile workers may face the loss of non-vested benefits.

The value of pensions can also be eroded by inflation that occurs after retirement. Most pension plans do not provide regular adjustments to keep

pace with inflation after retirement. According to the Department of Labor, fewer than 30 percent of participants in private defined benefit plans and 75 percent of participants in State and local plans have cost of living adjustments (COLAs). These COLAs are valued, on average, at 60 percent of the CPI. Without full cost-of-living adjustments, pensions decline in real terms as the pensioner ages, with the greatest effect on the oldest old. For example, a 4 percent inflation rate with no inflation adjustment would reduce the real value of income by one-half in approximately 18 years, or when a 65 year old retiree is 83. The issue of inflation protection grows in importance as the number of oldest old increases.

Security of future pension benefits is also compromised by cashing out vested pension benefits prior to retirement. There is evidence that, even with adverse tax consequences, many individuals who change employers cash out vested pension benefits. In 1988, 8.5 million workers reported that they had received more than \$48 billion in lump sum distributions from prior jobs. Only 11 percent rolled the entire distribution into a tax-deferred retirement account, while 34 percent apparently spent the entire amount.

There is a significant trend toward defined contribution plans as the primary coverage for workers with pensions. In 1975, defined benefit plans provided sole or primary coverage for 87 percent of private sector workers with pensions; by 1987, the percentage had declined to 68 percent. Private defined benefit pension plan assets have been projected to decrease from 53 percent of total pension plan (public and private) assets in 1990 to 50 percent by the year 2000, continuing a steady decline since 1960, while defined contribution plan assets are projected to increase from 25 percent of total pension plan assets to 27 percent by the year 2000.

The trend toward defined contribution pension plans could also reduce financial security during retirement to the extent that defined contributions are often taken as a lump sum rather than as an annuity. Those individuals receiving unindexed annuities from their defined contribution plans receive no adjustments for inflation.

The trend toward defined contribution plans is not a concern with respect to adequate prefunding of pensions, since defined contribution plan obligations are funded as each contribution is made. However, the Pension Benefit Guaranty Corporation (PBGC), which offers some protection for insolvency of defined benefit plans, does not provide any protection for defined contribution plans. In a defined contribution plan, the participant rather than the plan sponsor bears the financial risk of plan performance. In contrast, for the defined benefit plans some of this risk is borne by the employer and the PBGC. A very low financial return to the assets in the plan could affect wages and so benefits. Also, PBGC only issues a minimum level of benefits.

In 1990, the PBGC insured about 95,000 pension plans covering nearly 40 million workers. The PBGC, funded by premiums paid by private pension plan sponsors, had assets of \$3.3 billion and liabilities of \$5.1 billion for fiscal 1990. Premiums have been increased significantly to help reduce the deficit, and the resulting premium level is perceived as onerous by some employers. Projections based on the history of PBGC suggest that, by 1998, a surplus could begin to accumulate. Less optimistic assumptions lead to estimates that the accumulated deficit will remain near the current level through 1998, or grow to \$11.4 billion by 2000. The pessimistic scenario could result from the termination of one or more large, poorly funded plans sponsored by financially distressed employers. A recent report by the PBGC indicated that the shortfall among the 50 companies with the largest under-

funded retirement plans in fiscal 1990 totalled \$21.5 billion, an increase of more than 50 percent over the previous year.

Current valuation of pension plan assets and liabilities for defined benefit plans may add to the risk underlying private pension plans. Even for adequately funded plans, there exists a possibility of default of the assets funding the plan. For example, recent experience indicates that assets—in the form of deposits in savings and loans, or directly or indirectly in investments such as real estate, commercial mortgages, and junk bonds—are over-valued. Suggested changes to financial institution guarantee systems as a result of the recent crisis with banks and savings and loans significantly reduce the protection to pension trust funds (i.e., limiting the insured amount to a maximum per fund as opposed to a maximum per plan participant). Further, concern regarding the deterioration in the value and performance of assets is heightened for defined contribution plans because generally the individual participant is directly subject to the investment risk in those plans, unless the employer makes up any defaults.

Ultimately, all these risks are borne by individuals. The portion that each individual bears, however, is affected by how the risks are allocated across different aggregations of individuals. For example, individuals with defined contribution pension plans directly bear the risk of investment performance and, if real interest rates drop sharply, these individuals will have less than they expected when interest rates were higher. For defined benefit pension, who bears the risk of investment performance is not as clear. Employers promise a certain level of benefit, often related to salary levels. If economic conditions change and investment performance is poor, it may be necessary to increase contributions to the pension plan, and that may affect the level of wage increases for employees. Also, the PBGC insures a minimum level of benefits for employees of insolvent companies that had a defined benefit

pension plan. Ultimately, however, the funding of that insurance may fall on taxpayers. Thus, the risk could be shifted from the employees of a particular company to all taxpayers (including those employees).

Although the current private pension system can be a major contributor to individual financial security in 2020, there are risks and uncertainties associated with the design and funding of the system that must be addressed to ensure that the promises made by the system are realized. An especially critical concern is the status of the "safety net" provided by the PBGC. With greater aggregate pension benefits in 2020, the likelihood that the PBGC will have a major financing problem is probably higher, increasing the risk that tax money will have to support the PBGC. It is not certain that, given the increased demands on incomes of workers from Social Security and health care financing, taxpayers will be willing to support the PBGC. This increases the riskiness of defined benefit pensions.

Retiree Health Plans. With no change in public or private benefit provisions, the number of retirees eligible for privately provided retiree health benefits is expected to increase in the future. However, it is not at all clear that current benefit provisions will remain in place.

Employers are expected to experience substantial increases in their retiree health benefit costs, based on projected trends of health care costs in general and for the elderly, specifically. Recently introduced requirements by the Financial Accounting Standards Board (FAS 106) require private employers to include in their balance sheets liabilities for future retiree health costs. A recent survey indicates that a majority of employers expect their annual cost under FAS 106 to increase from 3 to 8 times the current cost of retirees'

annual claims.⁵² This requirement coupled with the expected increased costs for health care in general may result in the elimination or curtailment of benefits, or greatly increase retiree contributions to employer-sponsored Medicare supplements. In either case, out-of-pocket expenditures for a retiree's health care are likely to increase. These projected trends will be influenced by union and court action.

The rising expense of retiree health care for businesses increases uncertainties concerning the extent to which retirees can rely on these benefits for protection beyond that provided by Medicare.

Summary

The realization of the benefits from Social Security and employer-sponsored pensions, which are a major factor in the financial well-being of the elderly in 2020, is highly likely, although there are some risks and uncertainties that must be addressed, especially with respect to the design and funding security of employer-sponsored pensions.

The rising costs of health care makes the financing of Medicare and employer-sponsored retiree health care benefits problematic. If Medicare or employer-financed coverage is reduced, the elderly would need to increase the proportion of their income spent on health care. This could pose a threat to the economic security and well-being of the elderly, particularly certain vulnerable groups such as the old elderly and women living alone who have dwindling assets and rising health care costs.

⁵² *Business and Health*, December 1990.

OBSERVATIONS, NEXT STEPS, AND CONCLUSIONS

Major Observations

The following major observations emerge from the look at 2020 by the Expert Panel:

- From the perspectives of society and the individual, the benefits from future gains in income and wealth may be significantly reduced by the growing resources required to support the health care sector, if, as predicted, health expenditures continue to increase faster than GNP. This assumes that society concludes that the increasing expenditure of resources on health care is valued less than the reduced or foregone expenditures for other areas of consumption.
- The aging of the population, with its implications for the special needs of the elderly, and the increasing burden on the working-age population to support social programs for the elderly cannot be ignored. Our society will accommodate the necessary adjustments, if health care costs are maintained at a reasonable level.
- The growth of the costs of medical care projected through 2020 is attributable to continued increases in the intensity of care and medical inflation. The contribution due to the aging of the population is modest. However, demographic changes, especially growth among the very old, may result in nursing home use nearly doubling. Although

long-term care is less technologically intense than acute care, intensity for long term care is also projected to increase.

- The Expert Panel believes it is crucial to focus attention on the potential deleterious effects on the entire economy if the cost of health care continues to rise unabated. The potential adverse effect requires intentional policy intervention in the very near term. The Expert Panel believes it is not tenable for health care to continue to grow along the existing trend line. Even moderate growth in health care will place great demands on society's resources. Many expect that the rising cost of health care combined with barriers for some members of society to obtain needed care and other limitations with today's health care system will continuously generate pressure and tension within the political system, and that some measure of policy reform will be undertaken in the near term.
- Developing a systematic approach to measuring the potential effects of major policy reform and identifying barriers to consensus is a valuable, albeit difficult, pursuit. In considering reform, action today should be done in such a way as to ensure a beneficial effect on the future. Long range projections and analyses are encouraged as a mechanism to provide valuable insight on the long range effect. Refinements in tools and processes that improve the outcome of these tasks are encouraged.

Next Steps

Objectives and Criteria

Bases for Developing Criteria. The Panel discussed the appropriate application or uses for their observations about 2020 and the implications for today. They determined that one approach to translating their conclusions into something that would be useful to policy-makers would be to develop criteria to be used in considering approaches to social reform.

The process of developing solutions involves investigation of the right issues. In developing solutions to any problem, it is important to identify the desirable objectives in solving the problem. With respect to the provision of income security and the financing of health care, adequacy and equity are significant objectives. If it is determined that the sources are insufficient to provide for all the desired uses, a reallocation of limited resources must be made, by means of setting priorities for the uses, reducing the demand for various uses and developing additional resources.

Determining what is fair and equitable to the various segments of the population is very difficult. It is particularly important to consider the impact of the methods used to allocate limited productive resources, and to consider the probable responses of individuals and institutions to the alternative type of allocations being considered.

The different interests and motivations of various segments of the population are important to consider in developing solutions. However, it is important to recognize that these interests and motivations can change over time and there can be differences in attitude and expectations among members of a relatively homogeneous population segment. To the extent possible, the

results of quantifying these differences may suggest acceptable redistributions of resources and may be helpful in determining the potential impact of alternative public policy options on different segments of the population.

When developing solutions that impact large numbers of people and that can be very costly, it is also especially important to minimize inefficiencies and to strive to identify easily understood solutions. Alternative scenarios should be considered to account for unexpected effects on the system, for instance new technological advances.

The Panel specifically focused their attention on health care reform. A review of proposals, such as those identified in the first chapter, and present day approaches to evaluating health care reform proposals pointed to two over arching observations.

- It is often difficult to determine the interactive effects between a proposed health system reform and the larger economic and social "environments" within which health care and financing will be operating. Many reform proposals lack adequate detail for an analysis to indicate what the potential interactive dynamics might be. Often, intense debate flourishes without enough information to fully inform and align the debaters.

Both health care financing and delivery of care have defined relationships with the national economy. The current economy has helped to emphasize those interactive effects by highlighting "stress points" in the relationships—for example, labor changes and public insurance financing vulnerability; debt burden, savings rates and provider capital formation; corporate profitability and health service pricing. Evaluation of alternative reform proposals must take cognizance of those interactive

effects, and in a dynamic way that recognizes evolving shifts in both underlying structures and their relationships.

On an individual level, proposals must explicitly recognize the paradoxical nature of third-party insurance. Having the ability to obtain financial access to needed health services through third-party insurance represents a tangible asset for an individual or family. It also represents a liability because such financing ability is often indispensable to obtaining needed services, and because lack of third-party insurance may put at risk peoples' future earning power and tangible personal assets through medical indebtedness, the high cost of such insurance imposes a real burden on family income. This relationship becomes more complicated when viewing health care as an employer. Health care is a big business, the cost of health care represents income to those engaged in the business.

A particular problem arises with respect to future orientation, such as the long term impact on the cost, access and quality of services provided. In most policy proposals, the problems of health care financing and delivery are consistently defined in contemporary terms—numbers and characteristics of those presently uninsured, current hospital operating margins, relationship between employer profits and their health insurance costs this year. This orientation can lead to both definition of solutions and evaluation of their adequacy in terms of today's environment. However, any substantial reform of the financing and delivery systems is unlikely to be initiated and implemented immediately, is likely to be phased in over several years to accommodate to fiscal stringency and to avoid sectoral disruption, and is likely to reach maturity and have pervasive effect over an ensuing 20-year period. Hence, evaluation of the effectiveness of proposed solutions needs to be judged against the

economic and social circumstances likely to evolve during the coming 30 years.

- Persons who evaluate and comment upon alternative reform proposals are seldom explicit about the criteria they are using in making their evaluations. An observer cannot be certain (in more than a superficial sense) about the personal values and priorities commentators are drawing upon when making judgments.

In fact, it appears that criteria are often intuitive, incomplete, shifting, and inconsistently applied. This greatly complicates dialogue and detracts from reaching consensus. Health care reform, similar to every other major public policy decision, will be achieved only through the political process of negotiation and accommodation—the method we have for attaching values to facts and weighing national preferences. The nature and scope of health care reform that many contemplate is probably as far reaching as any public policy reform being considered and therefore, the role politics plays will be significant. Each participant will bring a different set of values (which sum to policy perspectives) to the negotiating table.

A number of organizations and individuals have developed alternative sets of criteria for evaluating the current proposals for health care reform. The criteria used by the Office of Management and Budget (OMB), Congressional Budget Office (CBO), a prominent health care financing consultant, and an economist with a private foundation are displayed in table 4.1.

Table 4.1

Currently Used Criteria

Office of Management and Budget	Congressional Budget Office	Government Contractor	Private Foundation Economist
<p>Cost containment</p> <p>Cost sharing</p> <p>Managed care</p> <p>Limit tax subsidy for employee-paid health benefits</p> <p>Price regulation</p> <p>Supply regulation</p> <p>Other</p> <p>Access</p> <p>Scope of coverage</p> <p>Benefits</p> <p>Medicaid expansion/buy-in</p> <p>Tax credits and subsidies</p> <p>Individual mandate</p> <p>Employer mandate</p> <p>Universal public insurance</p> <p>Who pays</p> <p>Government financing</p> <p>Employers</p> <p>Individuals</p> <p>Small-employer market</p> <p>Quality</p>	<p>Effect on people</p> <p>Effects on health spending</p> <p>Effect on workers, firms, and the national economy</p> <p>Effects on Federal, State, and local budgets</p>	<p>Impact on the total number of uninsured persons</p> <p>Impact on the utilization of health services</p> <p>Changes in source of payment for care</p> <p>Changes in family expenditures</p> <p>Impact on the health care delivery system</p> <p>Impact on employment and wages</p> <p>Target effectiveness</p>	<p>Access—financial access to virtually all Americans</p> <p>Cost containment—reduce expenditures on low-benefit, high-cost care</p> <p>Needless winners and losers—eliminate winners and losers produced for reasons unrelated to access and cost containment</p> <p>Value congruence—does not conflict with importance values embodied in U.S. economic and political institutions</p>

A cursory examination of the table indicates that those criteria do not reflect many of the significant concerns and issues raised by the Panel. For example, none of them addresses a long-term time horizon or the role of health insurance in an individual's overall financial position. In some cases, the "criteria" were simply plan features. Further, the criteria did not permit evaluators to explicitly identify their own values and beliefs, often so critical to support or rejection of a specific plan.

The Panel believes that the use of objectives and criteria can provide a systematic approach to collect information about how each health care reform plan operates and the probable effects of each. The Panel identified, and presents below, a set of objectives and criteria which could serve as a starting point for the development of consensus criteria to be applied by all reviewers to all health reform proposals. As plans pass through a "sieve" of fundamental criteria, additional and more specific criteria evolve and refined data are required and produced to support a more detailed plan evaluation and comparison of feasible approaches to health care reform.

Criteria

Effect on Opportunities for Underserved People to Receive Needed and Appropriate Health Services

It is important to acknowledge the distinction between barriers to health care and barriers to health insurance. Having insurance only removes some financial barriers. Insurance does not remove non-financial barriers such as transportation and sociocultural barriers, inadequate numbers of providers, and regulatory barriers (e.g., excessive paperwork, low reimbursement).

Conversely, one can have access to health care services in a direct service setting, for example, and still be uninsured.

Factors to consider include:

- financial barriers (e.g., through insurance, or services free at point of delivery; role of deductibles and copayment);
- geographic and manpower distribution barriers (such as providers within a normatively-defined distance available at time of need);
- socio-cultural access (language, customs, educational level); and
- range of services available, e.g. economical preventative services.

Distributional Effects of Who Pays in the Near Term and in the Future

The financing mechanisms being considered to support reform (business payroll tax, income tax, tax credits, dedicated value added tax, out-of-pocket payments, etc.) each have different distributional effects with respect to populations affected and impacts on other public program financing (e.g., Social Security).

Factors for consideration include both short-term effects and effects over the long-term as a consequence of changes in demographics, distribution of wealth, utilization, etc. Examples include:

- relative burden on workers for health care of the elderly;

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- progressivity of financing;
 - financial burden on the individual in poor health; and
 - relationship between individual pay-in to social insurance programs and expected benefits.

Effect on Short-Term and Long-Term Economic Growth for the Nation

Real per capita GNP is predicted to grow at an annual rate of about 1 percent between now and 2020. Health care expenditures are expected to grow at a faster rate so that the share of GNP associated with health care expenditures may increase to between 22.7 percent (Projection 3) and 31.5 percent in 2020 (Projection 2).

The criteria consider the extent to which a reform proposal imposes a moderating influence on the rate of growth of health care costs with respect to the resources the Nation is willing and able to spend on health care and its subsequent interactive effect on the overall economy. They do not, however, consider the extent health spending might stimulate the economy to grow at a rate faster than predicted. The precise relationship between health care costs and growth in the economy is not known. However, as health care consumes a growing proportion of the Nation's resources, there are fewer resources for other needs.

Factors to be considered include effects of incentives in the near- and long-term on:

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- the continued research, development and diffusion of cost-reducing technology⁵³
 - the development and diffusion of cost inducing technology of low utility
 - medical technologies and services of low utility
 - administrative efficiency
 - the labor market (e.g. employment opportunities, job mobility)
 - rate of savings or investments
 - U.S. economic position relative to foreign competitiveness
 - entry by new businesses and performance by current businesses in the market place

Effects of Reform Implementation

Implementation of health care reform must consider the following:

- level of disruption;
- indirect consequences of reform;

⁵³ As used in this criterion, technology takes on the broadest meaning as defined by OTA to encompass any "techniques, drugs, equipment and procedures used by health care professionals in delivering medical care to individuals, and the system within which such care is delivered."

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- administrative complexity of reform plan compared to the existing system;
 - availability of data to measure the effect of changes; and
 - permit new experimentation and innovation.

Relationship between Reform and American Culture and Values

Acknowledging and understanding the different tolerance for specific values and principles embedded in a health care reform plan can help the consensus building process. In practice, these beliefs and values can overshadow any technical merit a plan might otherwise achieve. Many of the terms and phrases below may be viewed as imprecise, having a variety of different meanings to different people. No one definition would satisfy every one since many of these issues or features come laden with the emotions associated with a value and belief system. Since conflicting perceptions interfere in the debate, these terms must be defined by the individual or group applying these criteria.

The list below includes (but is by no means inclusive of) features and concepts that are often associated with values and thus discussed as why one health care reform approach or another would or would not be acceptable:

- degree of access achieved;
 - effect on pluralistic system;
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- scope of government control;
 - effect on freedom of choice;
 - effect on quality;
 - degree of burden placed on system participants (e.g. insurers, providers, working aged consumers, poor);
 - effect on provider autonomy;
 - regulatory or market oriented incentives; and
 - other(s).

The Panel believes that the policy dialogue over both system reforms and the processes for implementing those reforms will be enhanced if each participating individual and group specifies its own priorities, values and preferences independent of any specific proposal. In addition to serving as a consistent and reliable "filter" through which a group can pass and evaluate reform ideas, the resulting body of criteria can be shared with others in the policy arena. As the critical criteria of individuals and groups become specified in the political debate, their use can illuminate consensus, identify opportunities for negotiation and compromise, and point toward technical areas in which additional developmental work could be fruitful.

Research Agenda

There is clearly much to be learned about how the dynamics of social policy interact with the economy and the implications for future economic growth. The Expert Panel believes that additional meaningful information about these interactions can benefit our society by enabling better informed decision making.

A fundamental requirement for sound policy decisions is data of good quality, scope and relevance. In today's environment of "instant" policy analysis, good data must also be coupled with tools that can provide the policy maker reliable and understandable information on the choices with which the policy maker is faced. The importance of investing in these foundations of good policy analysis cannot be overstated. Today's policy makers have benefited from past investments. The complex social policy alternatives facing decision-makers have been substantially enhanced over time due to investments in data collection, socioeconomic research and technical advances in macro and micro simulation and forecasting techniques. The necessity for continued investment in the foundation of informed social policy decision making becomes more critical as social programs continue to command more of society's resources.

The experience gleaned from being on this Panel was instructive in pointing to additional research that would prove meaningful. The research agenda presented in this chapter was guided by several influencing factors, including:

- The Expert Panel's dependence on existing data and research necessarily led the Panel to identify weaknesses and inadequacies of existing data and pointed to the need for additional analysis to strengthen future long range analysis; and

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- The development of criteria to assess the effect of policy intervention on the economy and individuals over the long term pointed to the need for specific information that long range projections and analysis might supply in order to improve the reliability of the outcome.

The following research pursuits are recommended:

Improving or Strengthening Data Used to Support Assumptions and Other Factors for Long-Range Projections on Health and Economic Status

Panel surveys collect longitudinal data, i.e., on the same individuals, families, or institutions over time. Compared to the usual cross-sectional data used to produce point-in-time estimates, they can provide better information to establish causal relationships and to understand the *dynamics* of changes in health or economic status for a specific group. Multiple observations of the same individual over time permit the separation, or decomposition, of behavioral differences to persistent individual differences versus those due to their responses to programs or their environment.

Panel surveys that are currently in the data collection phase, and proposed surveys that are expected to contribute to data collection gaps should be fully supported. In addition, the usefulness of such data would be enhanced through linkage to administrative and program records. Since the early 1980's, access to these records has been difficult, if not impossible. The process should be simplified in order to facilitate use of expensive panel studies.

One recognized problem with good economic data sets is that they generally do not have good health and disability measures; similarly, good health

surveys tend to have poor economic measures. Because there is evidence that wealth is associated with better health, there is a need for collection of reliable income and asset data in studies of health care. Another identified problem has been sparse health and economic data on the oldest old population. Additional databases should include oversampling of this group.

Two major, new longitudinal data collection efforts are currently underway: HCFA's *Current Beneficiary Survey* (CBS), which will collect data on the health and economic status of Medicare beneficiaries, and the National Institute on Aging's *Health and Retirement Survey* (HRS), which is a ten-year panel focusing on transitions of the near-elderly into later life (labor force, retirement, economic status, and family structure).

The Expert Panel is encouraged that new longitudinal data collection efforts are underway and has the following specific recommendations for future work:

- Longitudinal data, by age, tracking the same individuals and households over time, should be linked to administrative records and include:
 - work status
 - family structure
 - income
 - assets (financial, non-liquid, and housing)
 - health and disability status, including functional impairment status (using activities of daily living)
 - receipt of retiree health benefits (and their cost)
 - receipt of informal/formal home care

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- living arrangement (alone, with spouse, institutionalized)
 - pension receipt (including amount, type and change in level)
 - health care expenditures
 - health care utilization
- Cross sectional data should include:
 - family wealth/assets, by the level of financial, housing, non-liquid assets.
 - pension information on the level of former vested pension benefits.
 - type and availability of housing

Additional Analyses on Expected Effects on Individuals and the Economy of Changes to the Existing Health Care and Retirement Systems

Macro analysis

- What is the impact of an ongoing Federal deficit?
 - What is the optimal rate of economic growth?
 - What is the relationship between health care consumption, savings and rate of growth in the economy?
 - What sectors of the economy are affected by continued increases in rate of growth of health care and what are the effects, particularly on the labor market and foreign competitiveness?
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- What will be the impact on the economy if the rate of health care is restrained?
 - What lessons can be learned from other countries who are facing or are about to face similar strains on social programs as United States?
 - What effects does the aging of foreign populations have on the United States?

Micro analysis: Health

- What national policies will encourage the development and dissemination of labor saving/cost reducing technology?
- What national policies will discourage the development and diffusion of cost inducing technology of marginal utility?
- How will the effect of increased access to health care for those currently uninsured affect the level and rate of growth of health care expenditures and outcome?
- How will businesses respond to an increase in the cost of health care (either through payroll tax increases or increase in payout/premiums of negotiated/voluntary coverage of workers and retirees)? What part of the increase comes out of wages, profit or as an increase in the consumer price?
- What are the components of changes in intensity of health care services?

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- How is individual consumption/savings modified as health care costs continue to consume larger parts of their budgets?
 - What are the implications for future elderly and future workers of financing a larger share of health care spending out of pocket? From general revenues? From employer contributions?
 - What will happen within the health care industry, if rate of growth is restrained? What sectors would be most affected?
 - What is the effect of labor force participation on the availability of future caregivers, for both acute and long term care?
 - What are the implications for quality of life at advanced ages?
 - What cost containment mechanisms have long term effectiveness?
 - How will the health care infrastructure need to evolve to support the changing demographics?
 - How can home and community based care be used so as to both reduce institutional care for individuals and not induce aggregate utilization?
 - How will future developments in biological understanding and disease prevalence affect the workings of the insurance market, e.g. how would finding a cure for Alzheimers or a large increase in incidence of AIDS effect the workings of the insurance market?

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- What are the effects on cost and quality of a fixed budget payment to a local geopolitically defined group, i.e., county responsible for both acute and long term care?
 - How will expected demand for long term care services change if disability assumptions vary to account for potential progress in treating dementia and osteoporosis, for example? What are the implications?
 - Consideration should be given to alternative financing approaches evolving for long term care and research to support the implications of those alternatives should be pursued. For example, what are the effects of a health care payment system that distinguishes between the cost of housing (i.e., board) and the cost of medical care in long-term care settings, and only pays for the medical care?

Micro analysis: Pensions

- Have pension coverage rates stabilized, or will the decline of the 1980s continue?
 - What are the implications of the shift from defined benefit to defined contribution pension plans:
 - for security of retirement income?
 - for pension portability and preservation?
 - for the distribution of retirement income between early retirement and advanced old age?
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- What are the implications for asset holdings of changes in the form of pension payouts from defined benefit to defined contribution plans?
 - According to the Department of Labor reports of pension plans, a large and growing portion of pension plan payouts are lump-sums from defined contribution plans. Who receives those lump-sums and what do they do with them? How does this vary by age? Answers are critical for projecting future retirement income and refining incentives to avoid improper use.
 - What is appropriate level of governmental guarantees of pension plan viability?
 - How can pension plans be designed to reduce the impact of inflation on retirees?
 - What is the likelihood that favorable investment experience on pensions will continue?
 - What would be the impact on employee health benefits if pension investment returns should fall?
 - What would be the impact on future fringe benefits of alternative assumptions about financing of Social Security and Medicare? That is, if OASDI and HI were financed on a pay-as-you-go basis, what are alternative scenarios for employer contributions for pensions and employee health benefits? What are implications for total employer costs? For real wage growth of employees?

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- Could OASDI be better structured in response to evolving family structures, labor supply patterns, etc.?
 - Should the tax treatment of benefits be changed in response to future developments?
 - What are the income distribution/redistribution implications of the projection of OASDI?

Refinements in the Process of Long-Term Projections, Forecasts, and Simulations

A periodic study of the adequacy of long range projection methodologies, with particular focus on national health care expenditures, is recommended.

The Trustees and HCFA have refined methodologies used for projections of the HI Trust Funds for 25 years. HCFA and other researchers have made long term projections for national health care expenditures, although methodologies and assumptions vary. The projection process would benefit from a periodic independent analytic review and exchange of ideas.

Conclusions

The Panel's analysis of 2020 underscored the importance of long range analysis of social policy issues into 2020. The Panel believes that the potential command of future resources makes this critical for health care. Most analyses of new policy options cover only a short-term horizon. Even though there are limitations associated with long-range projections, such projections provide valuable insight into potential problem areas, the possible

magnitude of change that can be expected, the areas of relative growth, and the potential impact on other economic sectors.

Health care reform must be considered in a broad social policy context. Financing policies for both public and private health care must consider the effect of future demographics, income and wealth distribution, and their anticipated impact on economic growth. GNP, by itself, is an insufficient measure of affordability of health care. Other factors that measure the financial burden of health care and social programs on the individual and business must be considered.

The Nation faces serious health care financing and delivery problems, particularly in the next century. The issues facing policy makers are not easy to resolve. Reform requires a balance of fairness that can be maintained into the future. The Panel recommends that major policy decisions about the design and financing of health care should be developed, not solely in annual budget negotiations, but rather from a long-term perspective that aims to design the best possible health reform program given the resources that Americans are willing to devote to the purpose.

Further, the Panel concluded that the projected increase in health care expenditures through 2020 is dramatic under all plausible scenarios. The major factor in the rise in acute care costs is not demography. Instead, increases come from the ongoing evolution in technology, in the way that we use health services, and in the structure of our health care delivery and financing system. Since ongoing trends in these systems will exacerbate future problems, it is important to start significant change in our system as quickly as possible by a health policy that can appropriately contain these cost trends.

The issue of access to health care is of comparable importance to the issues of cost level and cost increases. There are no available projections of the number of uninsured to the year 2020. Having considered the trends of medical costs relative to wages, the size and aging of the population, and developments in the insurance market, the Panel concluded that it is very likely that a projection of the number of uninsured in 2020 would show more uninsured than there are at present. Since the projection gives no reason to expect improvement in access without major government intervention, the problem of access to medical services should be faced as quickly as possible.

Different methods of providing increased access lend themselves to different methods of cost containment, so it is best to consider these two issues simultaneously. Since there are a limited number of approaches to universal (or nearly universal) access, the natural first step in the analysis of health policy is to list currently discussed approaches and contrast their characteristics and impacts. The natural second step would be to compile a list of the many different government actions that can be taken to limit cost increases. Because different cost containment mechanisms fit with different methods of providing universal access, the third step would be to combine the approaches toward universal access with approaches toward cost containment, generating a matrix of combinations. There was strong interest by the Panel in further development of this approach, however, time did not permit further analysis.

The Nation faces the dual challenges of expanding health care coverage to those who are now inadequately insured and of containing the costs of care. The Panel's projections indicate that, in the absence of action today, health care will absorb an alarming proportion of the country's resources by the year 2020 and that the number of Americans who are inadequately insured

will increase. The Panel wishes to reiterate its sense of urgency about these issues and concludes we must address these challenges now.

APPENDIX 1

Comparison between Providing Income Security and Financing Health Care

For all segments of a population, the resources necessary to provide income security and finance health care come primarily from three sources: government (various levels), employer, and individual initiative. The actions of the government can significantly determine the importance of the other two sources, both because the extent to which the government provides resources (e.g., cash benefits or payment for medical services) affects the amount of resources required from the other sources, and because the government can provide incentives for the other sources to provide resources (e.g., tax deferral, tax exemption, funding regulations/insurance, etc.).

An illustration: Provision of Income for Retirement and Health Care for the Elderly

A comparison between the provision of income for retirement and the provision of medical services to the elderly illustrates how the various sources are used. The accompanying chart compares the provisions for income security and health care benefits for retirees in the United States.

In discussions about the provision of income for retirement, it is common to talk in terms of a "three-legged stool"—OASI, employer-provided pensions, and individual savings. OASI, the first leg, is a government program, required of (almost) everyone, with individuals paying taxes during their working lives and receiving an annuity benefit after retirement (or sufficient

age). The benefit is related to previous earnings levels, and so, indirectly, to taxes paid, with the relationship chosen to be redistributive across income levels (ignoring differing life expectancies); the relationship is also redistributive across generations, in the sense that the relationship between the value of benefits received and the value of contributions paid has differed for different generations. After retirement OASI benefits are currently fully indexed for inflation.

The second leg is voluntary pensions provided by employers for their employees in government and in private industry. Private pensions are encouraged by the government through favorable tax treatment. Moreover, funding requirements and insurance through the Pension Benefit Guaranty Corporation attempt to protect individual claims and ensure that individual claims against future income are supported by adequate assets.

The third leg of the stool, individual savings, may be tax-favored and is somewhat protected by a variety of government programs to support and protect investment returns.

The provision of medical services to the elderly can be similarly viewed in the "three-legged stool" framework. Hospital Insurance (HI) under Medicare is a Federal program for which individuals pay taxes during their working lives and receive benefits after age 65. The benefit package is uniform while the tax base before retirement varies with earnings, with the ceilings on taxable wages currently differing for HI and OASDI. In contrast to OASI, there is explicit provision of contemporaneous general revenue financing for the Supplementary Medical Insurance (SMI) part of Medicare as well as the payment of individual premiums. Under current law, after 1995, the SMI premiums will increase by the same percentage as the cost of living increase in OASI cash benefits.

From the employer's leg, there is often employer-provided health-care coverage to retirees that is supplemental to Medicare after age 65. Unlike pensions, there has not been a push to require employers to fund these expenses, nor for the Federal government to insure continued provision of this benefit by employers in financial difficulty, although they do receive consideration in bankruptcy proceedings. The recent FASB changes raise the issue of recognition of these obligations.

The third leg of the stool is individual payment through coinsurance, deductibles, payment of premiums for both Medicare and Medigap programs, and payment of "out-of-pocket" expenses for services not covered, most notably prescription drugs and long-term care.

The use of both payroll taxes and individual insurance premiums to finance Medicare is particularly noteworthy. Conceptually, with insurance premiums, individual premium payments are meant to reflect the costs to the system of the associated risks. Private insurance premiums are designed to reflect different costs associated with all significant determinants of the risk, while group insurance or community-rated premiums reflect a broader pooling of risks. With taxes, there is a conscious focus on redistribution. If one considered varying Medicare premiums by age, an individual insurance premium orientation would suggest that older people should pay more. A tax approach would recognize that older people are, on average, poorer and so the premium rules might appropriately lead to lower (or at least not higher) average premiums with greater age. The social insurance or community rating approach would suggest that, generally, premiums not vary by age.

One common problem in providing for retirement income security and financing health care for the elderly is the issue of portability of employment-related benefits. Labor mobility creates problems in the design

of a portable pension system when defined benefit pensions are involved (although no difficulty for defined contribution pensions). Similarly, labor mobility creates difficulties in the continuity of medical coverage.

It is useful to distinguish two potential problems with medical coverage. One is the problem of an individual who may have difficulty obtaining insurance and whose continuity in access to medical services may thus be disrupted. A second is that there is little standardization between employers in benefit plan design; employee contribution rates and supplemental medical benefits for retirees. Employers usually offer no vested medical coverage to terminating employees, only to those who actually retire from service. There is the added complication that multiple coverage may be involved in two-worker families. Employer coverage is primary to Medicare for active employees and spouses over 65.

In comparing the nature of employer-provided retirement benefits and employer provided health care benefits, it is interesting to note that the actuarial value of pensions is the same for single workers and those with families. The value of medical benefits is different for single coverage versus workers covering families with family cost often more than double single cost.

Across sources and over time there is an important difference between retirement income security cash benefits and health care benefits for the elderly. Cash income benefits from different sources are naturally additive, with little important interaction except in the incentives to accumulate.

The interaction of health care benefits from various sources is more complicated. Medicare deductibles and coinsurance are intended to reduce administrative costs and control utilization as well as lower the share of cost

paid by government. To the extent that Medicare supplemental coverage reduces the control effects of the benefit design, government costs may increase. This does not happen with retirement benefits.

One can similarly compare income security and health care financing for other segments of the population: the poor, the disabled, the unemployed, etc. For example, for the poor, an analogous comparison with respect to the public sector (government) is that between SSI and Medicaid.

Important Questions

The above discussion raises significant questions with respect to each of the sources of funding.

With respect to the governmental source, there are several natural questions:

- What are the appropriate roles of the various levels of government?
- What is an appropriate division between "in-kind" benefits (e.g., payment for medical service) and cash benefits?
- Should cash benefits and medical benefits rely to a different degree on the payroll tax?
- Is the use of general revenues appropriate for cash benefits and/or medical benefits?
- Should there be different tax treatment for cash benefits than for medical benefits?

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- What type of indexing is appropriate for cash benefits? for Medicare premiums?
 - Does it make sense to have income-related cash benefits but require payment of a flat premium for medical benefits?
 - What is an appropriate division of medical benefit financing between individual premiums—possibly risk-related—dedicated payroll taxes and general revenues?

With respect to the employer, important questions include:

- What incentives are appropriate to encourage continuity (portability) of employment-related benefits when individuals are likely to have multiple employers over their lifetime? How can inappropriate "cash-outs" of pension benefits be discouraged?
- How will employers fund post-retirement medical benefits, given that the current tax treatment discourages such funding? How will benefits be protected?
- What is an equitable treatment of single workers versus workers with families for retirement benefits? for health care benefits?
- To what extent do/should individual differences in potential medical or pension liability affect employment practices (i.e., hiring/firing)?

With respect to individual initiative, important questions include:

- To what extent should individuals be responsible for providing for their own income security and health care financing?
- What are the advantages and disadvantages of financing health care with a risk-sharing transfer mechanism (e.g., private insurance, as opposed to savings)?
- Should there be greater risk transfer/sharing for health care financing than for income security because of the uncertainty of the occurrence, timing and cost of the former? Can private insurance adequately share/transfer that risk for long-term care?

Across sources, the primary question is: What is the least costly/most efficient allocation of costs to the various sources? Efficiency issues include, for example, administrative costs and administrative and benefit design coordination.

Any redesign of the approach to providing income security or health care services should begin by addressing these questions.

Federal (Leg 1)	RETIREMENT HEALTH BENEFITS		
	RETIREMENT INCOME	Medicare	
	OASDI	HI	SMI
	Earnings-related payroll tax Employer/Employee 50/50 Employer tax-deductible Employee after-tax Vesting (10 years) Partially advance-funded. Fund exceeds 1 year's outgo until after 2035.	Payroll tax (HI base) Employer/Employee 50/50 Employer tax-deductible Employee after-tax Vesting/Current Partially advance funded Exceed 1 year's outgo until 2000 Trust fund depleted 2005	General revenues and enrollee premiums No advance funding pay-as-you-go
Level of Funding	Full payment at 65 Benefits indexed by CPI Reduced at 62-4 Increased after 65	Full benefits at 65 Deductible and coinsurance adjusted annually No early retirement	Full benefits at 65 No specific indexing Premium equal to 25% of cost No early retirement
At/After Retirement	Spouse eligible at 62-5 Benefits adjusted/50% Spouse earnings used if higher benefit Still paid if working, subject to earnings test before age 70. Employment income subject to FICA taxes. No offset for pension, dividends, etc. (unearned income). OASI partially taxed (incomes over \$25,000 for singles, \$35,000 for couples)	Spouse eligible at 65 only Full benefits If employed, not retired, employer plan primary. Employee may opt for Medicare if plan contributory. Cannot have employer Medigap if employer active plan offered. Employee and spouse covered at retirement age 65. Employer may pay part B premiums. Benefits not taxed. Individual premiums/out-of-pocket/Part B premiums are deductible under IRS rules to extent paid by retiree.	Spouse eligible at 65 Separate SMI premium
If Working			
Income Taxes			

RETIREMENT HEALTH BENEFITS

RETIREMENT INCOME

Employer (Leg 2)

	<p>Retiree plan integrated with Active plan up to age 65; frequently Medicare Supplement after 65.</p> <p>Vesting often follows pension (unions).</p> <p>Many actives non-contributory.</p> <p>Increasing contributions.</p> <p>Contributions often change at early retirement; age 65.</p> <p>Contributions often pre-tax through Section 125; otherwise, after-tax.</p>	<p>Retiree plan integrated with Active plan up to age 65; frequently Medicare Supplement after 65.</p> <p>Vesting often follows pension (unions).</p> <p>Many actives non-contributory.</p> <p>Increasing contributions.</p> <p>Contributions often change at early retirement; age 65.</p> <p>Contributions often pre-tax through Section 125; otherwise, after-tax.</p>
Level of Funding	<p>Generally no funding.</p> <p>No employer tax deduction for advance funding.</p> <p>FAS 106 will require future liabilities on employer's balance sheet.</p> <p>Uncertain guarantees of future benefits.</p> <p>Active costs, Part B premium and retiree claims tax-deductible for individuals.</p>	<p>Generally no funding.</p> <p>No employer tax deduction for advance funding.</p> <p>FAS 106 will require future liabilities on employer's balance sheet.</p> <p>Uncertain guarantees of future benefits.</p> <p>Active costs, Part B premium and retiree claims tax-deductible for individuals.</p>
At/After Retirement	<p>If retired, often covered; otherwise, employer health plan terminates, subject to COBRA or State regulations, and conversion option.</p> <p>Plan changes at 65; widows often covered subject to remarriage.</p> <p>If employed with no medical coverage, no change.</p> <p>If new medical coverage, new employer is usually primary to retiree health plan (and Medicare)</p> <p>Retiree will bargain for pay, without disturbing his retiree and Medicare coverage.</p> <p>Benefits not taxable to retiree. Contributions deductible under IRS medical deductions limits (along with other out-of-pocket and Part B premiums).</p>	<p>If retired, often covered; otherwise, employer health plan terminates, subject to COBRA or State regulations, and conversion option.</p> <p>Plan changes at 65; widows often covered subject to remarriage.</p> <p>If employed with no medical coverage, no change.</p> <p>If new medical coverage, new employer is usually primary to retiree health plan (and Medicare)</p> <p>Retiree will bargain for pay, without disturbing his retiree and Medicare coverage.</p> <p>Benefits not taxable to retiree. Contributions deductible under IRS medical deductions limits (along with other out-of-pocket and Part B premiums).</p>
Income Taxes	<p>Defined benefits, 96% non-contributory.</p> <p>Defined contributions sometimes contributory.</p> <p>Vesting required by ERISA.</p> <p>Non-portable generally cash out small amounts on early terminations.</p> <p>Employee contributions after-tax often (See Leg 3).</p> <p>Advance funding required by ERISA.</p> <p>50% of plans full-funded; others, less.</p> <p>PBGC tax per head, based on funding levels.</p> <p>Hence, insured up to certain limits.</p> <p>Contributions tax-deductible for employer.</p> <p>Income paid, adjusted actuarially to retirement date.</p> <p>Survivor benefit standard options.</p> <p>Other payout options</p> <p>Paid regardless of employment/earnings status if retired from employer.</p> <p>Can be a "consultant"/subcontractor</p> <p>All pension is taxable except for employee contributions.</p>	<p>Defined benefits, 96% non-contributory.</p> <p>Defined contributions sometimes contributory.</p> <p>Vesting required by ERISA.</p> <p>Non-portable generally cash out small amounts on early terminations.</p> <p>Employee contributions after-tax often (See Leg 3).</p> <p>Advance funding required by ERISA.</p> <p>50% of plans full-funded; others, less.</p> <p>PBGC tax per head, based on funding levels.</p> <p>Hence, insured up to certain limits.</p> <p>Contributions tax-deductible for employer.</p> <p>Income paid, adjusted actuarially to retirement date.</p> <p>Survivor benefit standard options.</p> <p>Other payout options</p> <p>Paid regardless of employment/earnings status if retired from employer.</p> <p>Can be a "consultant"/subcontractor</p> <p>All pension is taxable except for employee contributions.</p>

Personal Savings (Leg 3)	RETIREMENT INCOME	RETIREMENT HEALTH BENEFITS
	<p>Generally after-tax, except 401(K), IRA, Profit Sharing, tax-deferred annuity. May have employer matching. Tax deductions allowed by IRS rules. Voluntary after-tax contributions possible in excess of IRS limits. Investment options, annuity options, etc. Must start withdrawal by 70. Many options. Early withdrawal penalty risks (IRS)</p>	N.A. (only under personal savings)
At/After Retirement	<p>Withdrawals taxable to the extent of investment earnings, employer contributions. Offset for after-tax contributions.</p>	Medigap premiums (private) or other medical expenses, deductible per IRS rules.
Income Taxes	<p>Some insurance against insolvency or mismanagement by financial institution. No guaranties of return on saving.</p>	Some insurance against insolvency or mismanagement by financial institution. No guaranties of return on saving.

APPENDIX 2

Medical Care and Insurance in a Market Economy

In analyzing medical care systems and related policy options, it is important to consider the unique characteristics of medical care that distinguish it from many other goods and services. To better understand how medical markets work, it is useful to compare their characteristics and performance to the standard competitive model of economic theory. Economists have long recognized three characteristics of medical care that affect its provision in a market context:

- limited consumer ability to evaluate quality, particularly prior to use;
- the existence and operations of insurance in the marketplace; and
- the social desire to provide some level of medical services to those with low incomes relative to their medical needs.

Each of these features affects the manner in which resources are allocated in medical care markets. None of them is unique to medical care markets, although in combination they may well create a unique set of barriers to a well-functioning market. In addition, many believe health care to be a special good which results in placing unusual value on its services, especially in life-or-death situations, or in situations where quality of life can be improved. Under these circumstances normal consumer behavior may be superseded to seek remedies regardless of the cost.

Judging Quality of Care

Judging the quality of goods is a widespread problem in markets for many types of goods. Simple market models, where consumers are assumed to know the quality of the goods, show that normal competition yields desirable results in terms of efficient resource allocation. In many markets—for example, those in which consumers make frequent purchases of similar goods—the assumption that they can recognize quality differences is plausible. But for medical services, the link between use and appropriateness of outcome is often unclear and the consequences of poor judgement can be critical. Even physicians have difficulty judging the quality of services provided because, among other reasons, individual patient responses to therapies may be uncertain and unique, and patient compliance with follow-up treatment may be less than perfect.

In other markets in which uncertainty about quality is prevalent, organizations have arisen to measure and rate goods and services and to sell this information to consumers. Magazines like *Consumer Reports* and bond rating services like Moody's are examples of this. Although the government has begun to establish an evaluation or screening mechanism by gathering and disseminating data on the performance of over 7,000 U.S. hospitals in terms of mortality rates, the difficulties of evaluating over one half million U.S. physicians (many of whom work in these hospitals) are apparent. Thus far, our attempts to provide useful information on the quality of medical care to consumers are in their infancy.

The problems of assessing quality are particularly important in this market where providers both make recommendations about needed services and provide those services. It is particularly difficult to create appropriate

incentives in this circumstance, commonly referred to as a principal-agent problem in economic analysis.

Insurance

The uncertainty surrounding the probability and size of medical expenditures also causes this market to differ significantly from the simple competitive market model. Individuals, facing substantial uncertainty about their future medical expenditures, want to insure against this risk. The existence of insurance has profound implications for the nature and performance of the market that results. Insurance creates an incentive problem, called "moral hazard": because individuals do not face the full cost of services at the time of use, they have an incentive to use more services. Moreover, with expenditure-based insurance and limited cost sharing, the consumer has less incentive either to seek out low-cost alternatives or to sacrifice some quality for lower cost (Pauly, 1968).

Several of these characteristics of medical insurance also affect the behavior of providers. If consumers are relatively insensitive to the price of health services and seek the "best possible" care, and if providers have some market power, they may take this into account in recommending the type and quantity of services that they will provide and in the prices they charge for their services. To limit the impact of this, insurers, in turn, have developed and employed various cost-containment techniques. For example, deductibles and coinsurance represent a response to the moral hazard problem, aiming to limit the incentive to use care. Another common technique is to define provider payment as "reasonable" limits and limit reimbursement to that amount. The development of HMOs can also be seen as an effort to control these incentive effects through controlling choice of providers and encouraging selection of efficient purchases.

In addition to the problem of moral hazard, the market for voluntary medical insurance is also affected by what is known as a selection problem. There are two versions of this problem. The first, known as adverse selection, arises when insurers lack knowledge that consumers have about their probable future medical expenses. As a result, individual consumers who anticipate high expenses try to buy generous coverage, while insurers try to design policies that will appeal to persons with low or average expected expenses. Adverse selection is particularly a factor in the individual and small-group market, although its extent is not known. The other problem arises when insurers can distinguish people with high medical risks from those with low medical risks, and charge higher premiums to the former and lower premiums to the latter. This process can price people at risk for needing medical care out of the market or not permit them to obtain insurance at any price due to "pre-existing" conditions. On the other hand, the alternative of "community rating", or premium averaging, makes premiums look unattractively high to those considered to be at low risk of needing medical care risks, and creates financial difficulty to insurers who provide coverage to a relatively high percentage of high risks. In the current market, private insurance will not be affordable to those with high risks and relatively low incomes. Overall, the selection problems and insurer strategies to cope with them lead to high administrative costs of insurance and the formation of unstable groups for insurance.

The selection problem also affects people over time. People who are low-risk this year desire longer term protection in the event they become high-risk in the future. Under our current employment-based system, the effect of guaranteed renewability for the entire group overcomes this problem for most workers with insurance, provided they continue in the same job and their employment group as a whole is not priced out of the market. This system provides less assurance for small employer groups who are not guaranteed

renewal of their insurance and for individuals who change jobs or are unemployed.

Other aspects of this insurance market also affect the types of insurance provided. First, the relatively high administrative costs of individual policies provide a strong incentive for promotion of group coverage, which is by far the major type of policy sold. Second, the purchase of health insurance simultaneously from both public and private sources can have unintended redistributive effects if the benefits across the plans are not coordinated. This is best illustrated by the elderly, many of whom have one or more policies supplemental to Medicare. These policies often cover the deductibles and copayments built into Medicare, and as a result, these cost-sharing devices cannot have the effect of encouraging cost-consciousness or reducing inappropriate use. Third, health insurance protects individuals not only against the risk of large losses, but also, because it is a prepayment mechanism, removes the barrier to care. This may encourage appropriate use of preventive services, well baby care, and office visits when they are covered.

Equity of Access

The commonly held view that medical care is a special good, to which all citizens should have access, influences how our society deals with resource allocation issues in this arena. Conventional analyses of laissez faire competitive markets acknowledge that the resulting income distribution will not generally be socially attractive in a health care context. Consequently, our government regularly attempts to redistribute income through various means to achieve a more appealing distribution. Since medical care is sometimes seen as a "merit good", or a good for which the access and use of our fellow citizens is of concern to us (sometimes referred to as good-

specific altruism), government sometimes takes steps to "improve" the distribution of this particular good. Public insurance programs, such as Medicare and Medicaid, can be seen in this light, as can direct service programs, such as community health centers.

APPENDIX 3

Health Expenditure Projection Model

The model used by the Office of the Actuary, HCFA, to develop the health spending projections in this report is described in the Fall 1991 issue of the *Health Care Financing Review*⁵⁴ and in previous *Review* articles.⁵⁵ HCFA projections of health expenditures to 2030 are discussed in a forthcoming article in *Health Affairs*.⁵⁶ This description of the model is based on these sources.

The model is actuarial—relying on trend analysis rather than econometric fitting of dependent to independent variables—and consists of a series of identities, the factors of which are projected and reconciled.

The projections are based on historical estimates of national health expenditures. Estimates of annual expenditure by type of service and by source of funds comprise the overall framework within which the model operates. The projections were developed by using historical figures through 1989.

The projections take as given the macroeconomic assumptions used to prepare the Medicare and Social Security trust fund reports. Those reports

⁵⁴ Sonnefeld, Sally T.; Waldo, Daniel R.; Lemieux, Jeffrey A.; and McKusick, David R. "Projections of National Health Expenditures Through the Year 2000", *Health Care Financing Review*, Fall 1991.

⁵⁵ Arnett, R.A. III; McKusick, D.R.; Sonnefeld, S.T.; and Cowell, C.S. "Projections of Health Care Spending to 1990", *Health Care Financing Review*, Spring 1986. Division of National Cost Estimates. "National Health Expenditures, 1986-2000", *Health Care Financing Review*, Summer 1987.

⁵⁶ Daniel R. Waldo, Sally T. SonnefeldT., Jeffrey A. Lemieux, and David R. McKusick, "Health Expenditures Through the Year 2030", *Health Affairs*, Winter, 1991.

contain three different sets of economic and demographic assumptions: optimistic, intermediate, and pessimistic. All of the projections are based on the Alternative II (intermediate) set of assumptions. In theory, differential growth of health care spending should affect macroeconomic activity as well as sector-specific activity, but at present, the former effects are not explicitly modeled. Work is underway at HCFA to incorporate the projection model with a model of the general macroeconomy, but results of that effort are not yet available.

In addition to exogenous macroeconomic assumptions, the model incorporates projections of provider manpower. The model uses Health Resources and Services Administration projections⁵⁷ of the number of physicians and dentists to project expenditures for the services of those professionals.

As mentioned earlier, the model used for the projections consists of a series of identity equations. The typical equation consists of seven factors that describe expenditures (E) for a good or service:

$$E = Pop \times PGNP \times \frac{Price}{PGNP} \times Ua \times \frac{Util}{Pop \times Ua} \times Ra \times \frac{E}{Price \times Util \times Ra}$$

⁵⁷ Bureau of Health Professions, *Seventh report to the President and Congress on the status of health personnel in the United States*. DHHS Pub. No. HRS-P-OD-90-1. Health Resources Administration. U.S. Department of Health and Human Services, March 1990.

The factors are defined as follows:

Pop — This is the number of people in the United States as of July 1.

Projections are made by Social Security Administration actuaries and are exogenous to the model.⁵⁸

PGNP — This represents the GNP implicit price deflator, a measure of economy-wide price inflation projected by the Social Security and Medicare trustees and thus exogenous to the model.

Price — This measure compares the price of the health good or to
PGNP general inflation (i.e., it reflects sector-specific price inflation). It captures demand-pull inflationary pressures such as changes in income or insurance status, as well as supply-push factors such as differential productivity and wage growth and provider-pricing strategies.

Ua — This factor reflects the effect of the age-sex composition of the population on use of that good or service. For example, as the proportion of the population aged 75 or over increases, use of nursing home care is expected to increase even in the absence of any other changes. Construction of this factor—which is exogenous—is described elsewhere.⁵⁹

⁵⁸ Board of Trustees of the Old Age, Survivors, and Disability Trust Fund, Baltimore MD, May, 1991.

⁵⁹ Arnett, et al, 1986. *op. cit.*

Util — This factor captures use per capita other than that
Pop x Ua generated by demographics. The specific measure
varies by type of service. For example, inpatient
days are used to project hospital inpatient expenditures, and outpatient
visits to project hospital outpatient expenditures.

Ra — This term captures the effect of the age-sex composition of the
population on the intensity of service—that is, on expenditures per
unit of use, net of price effects. As with the term "Ua," this factor is
exogenous, and its construction is similar to that of the age-sex use
factor.

E — This residual term reflects intensity net of age
Price x Unit x Ra and sex effects and might be called "real
expenditure per unit of service." It
incorporates the effects of changes in technology and in the mix of
procedures performed during the unit of service. It also reflects
changes in regulations or policies that affect the quantity and quality
of resources used to produce a unit of service. Like any residual, it
also reflects accumulated measurement errors, and the effects of all
other factors not specifically or implicitly identified elsewhere.

Expenditures are projected separately by types of service and then aggregated
to form an estimate of total expenditures. In all, projections are made for
each of 18 different types of health care expenditures, including spending for
services of providers, for drugs and durable goods, and for activities—such
as research and construction—that do not represent direct services to
individuals.

The Range of Projections

HCFA provided the Panel with four sets of projections, labeled Projection 1, 2, 3, and 4 in this report.⁶⁰ Projection 1 represents a continuation of recent rates of real expenditure growth. Projection 2 represents a very slight slowing of the trend in real per capita expenditure growth observed over the past 20 years. Projection 3 represents some reduction in price inflation and significant reduction in intensity of services. Projection 4 represents sharp curtailment of growth in health care spending. This report has focused on Projections 2 and 3, which the following section describes in more detail, using hospital services as an example. Projections 1 and 4 are described at the end of this appendix.

Components of Growth in Projections 2 and 3

Hospital care is the largest single component of national health expenditures and is projected to grow the most rapidly. It accounted for 38 percent of total expenditures in 1990, and is projected to be about 45 percent of total spending in 2020 under Projections 2 and 3. Tables showing components of growth in other key types of health care services—physician services and nursing home care—are at the end of this section.

Total hospital expenditures are projected separately in five parts, two of which account for the largest part of spending for hospital care: inpatient care and outpatient care in community hospitals. Community hospitals are defined as short-stay (average length less than 30 days) non-Federal hospitals open to the public. They include State and local hospitals and private non-

⁶⁰ Projections 2, 3, and 4 in this report are also reported in a forthcoming article by Waldo, et al. in *Health Affairs*, Winter 1991.

profit or for-profit facilities and account for about three-quarters of all hospital beds. Three components of hospital spending—Federal hospitals, other non-community hospitals (such as long-stay, rehabilitation, or mental hospitals) and community hospital revenue from other than patient care (such as gift shops)—are not discussed here.

Community Hospital Inpatient Care. Components of inpatient spending include hospital prices, utilization, and intensity of services.

Hospital prices. This time series is based upon the Alternative II (intermediate) assumptions used to prepare the annual Social Security and Medicare Trustees' reports. In the Trustees' reports, a "prospective payment system (PPS) price index" is forecast for hospital inputs excluding capital, leases, and medical professional services. The Trustees' index also incorporates a blended proxy for wages that combines internal (industry) and external (service sector) movements.

The price index used in the projections model is tied to this PPS price index. The projections' price index covers all hospital inputs and the wage proxy is internal only. In the recent period, this index has grown about a percentage point faster than the PPS index; the difference between the two is projected to disappear over time. To derive the growth of the projections' price index, this differential is added to the alternative II assumption of growth in the PPS index. As with other prices in the projections model, hospital prices are shown net of general inflation (as measured by the GNP implicit price deflator).

As shown in table A.1, prices for a fixed market basket of goods and services used by hospitals in the provision of care have risen faster than prices in general in the past, and are projected to continue to do so. Net of

overall inflation, the hospital "input price index" grew at an average annual rate of 1.0 percent in the 1970s and at a rate of 2.1 percent in the 1980s. In health spending Projection 2, it tapers down from 1.5 percent in the 1990s to 1.3 percent in 2010-2020, for an average annual rate of 1.4 percent over the 30-year period. Under the slower growth Projection 3, it tapers down to an average rate of 1.1 percent in 2010-2020, for a 30-year average of 1.3 percent.

Utilization. Inpatient utilization is measured in per capita days of care. The projections use an adjustment factor to reflect the effect of the projected change in the composition of the population, based on observed differences in days of hospital care by sex and 5-year age groups. The effect of population mix added 0.5 to 0.6 percentage points to the average annual growth in inpatient days during the 1970's and 1980's, and is projected to continue at that rate through the 2000's. The estimates are the same under Projections 2 and 3, because they use the same population projections. Between 2010 and 2020, the effect of population aging is larger, as the first part of the Baby Boom generation comes to be over age 65.

The projection of inpatient days of care also builds on observed utilization trends other than that due to changes in the age and sex composition of the population. Utilization of inpatient services, ignoring growth attributed to population mix, actually declined slightly in the 1970's and more dramatically in the 1980's. Private-sector initiatives to reduce inpatient hospital use and Medicare's prospective payment system (PPS) led to reductions in length of stays. (At the same time, however, hospital outpatient utilization increased.) In both Projections 2 and 3, this component of inpatient utilization is projected to grow moderately, at an average annual rate of 0.4 percent over the next three decades.

Intensity. This final component of the hospital expenditure projections is the residual or "E" term in the projection equations. It represents growth in the cost per patient-day of care over and above that due to hospital input prices. Like that for utilization, the measure of intensity includes an adjustment factor to account for the effects of changes in the age and sex composition of the population on the cost per day of care. Its effect is small.

The residual, or intensity, also captures changes in cost per day of care due to all other causes—such as the greater use of advanced technology for inpatient care, and shifts in patient mix other than that reflecting the change in the age-sex composition of the population. For example, the decline in inpatient utilization during the 1980s associated with shorter hospital stays and greater outpatient use was accompanied by significant growth in intensity (or cost per day) of inpatient care. The intensity of inpatient care grew at an average annual rate of 4.2 percent in the 1970's and 4.8 percent in the 1980's. The significant shifts observed in the 1980's (decreased utilization and increased intensity of inpatient care) are projected to stabilize over the next 30 years, with inpatient intensity growing at an average annual rate of 2.1 percent under Projection 2, and 0.9 percent under Projection 3.

Community Hospital Outpatient Care

Hospital Prices. In projecting expenditure growth for outpatient care, hospital prices are based on the same hospital market basket used for inpatient services. Consequently, the historical and projected rates of growth in outpatient services prices are the same as those in inpatient services. (See table A.2.)

Utilization. Outpatient utilization is measured in hospital visits per capita. For reasons discussed earlier, utilization of outpatient services grew rapidly in

the last two decades. Very little of that increase is attributable to changes in population mix. Rather, it appears to reflect a shift in treatment patterns away from hospital inpatient days (or physician office visits) to hospital outpatient settings. The average annual growth rate in outpatient visits is projected to decline from 3.1 percent in the 1980's to 1.7 percent under Projection 2, or 1.5 percent under the slower growth Projection 3.

Intensity. This component of outpatient services also grew rapidly in the 1980's, as hospitals provided more complex treatments on an outpatient basis. The annual rate of growth in intensity is projected to decline from 5.7 percent in the 1980's to 3.4 percent under Projection 2 or 2.5 percent under Projection 3.

Overall, the projections of hospital care indicate some stabilization in the shift from inpatient to outpatient care observed in the 1980's.

Other Types of Services. Components of growth in Projections 2 and 3 similar to those for inpatient and outpatient hospital care are shown for physicians' services and nursing home care in tables A.3 and A.4, respectively. Table A.5 summarizes the historical and projected trends for these four types of services under Projections 2 and 3.

Projections 1 and 4

Projection 1 was prepared for the Expert Panel. Its purpose was to show the share of GNP that would be allocated to health care spending if the average annual growth in real per capita spending observed in the 1980's (4.7 percent) were to continue indefinitely. Components of growth in Projection 1 were not estimated separately, either by type of service or by

cause of growth—health care prices, utilization, or intensity. (See table A.6.) In this scenario health spending would be about 36 percent of GNP by 2020.

HCFA constructed Projection 4 to show the effect of immediate curtailment in the growth in health care spending, effective in 1992. In this scenario real per capita spending, other than that attributed to the change in the age and sex composition of the population, was constrained to grow no faster than the rate of growth in real GNP per capita. Table A.7 shows components of growth in this scenario for inpatient and outpatient hospital care, physicians' services, and nursing home care. For each service, price growth in excess of general inflation after 1992 is zero. (The average for the 1990's is slightly larger than zero because it includes price growth early in the decade.) Growth attributed to all causes other than change in population mix reflect the assumption that it will not grow faster than real per capita GNP. (Again, the average for the 1990's is somewhat higher because of growth early in the decade.)

Table A.1

**Inpatient Community Hospital Services
Components of Rate of Growth in Expenditures
Actual for 1970-1990 and Projections 2 and 3 for 1990-2020
(Average Annual Growth Rates, in Percent)**

	1970- 1980	1980- 1990	1990- 2000	2000- 2010	2010- 2020	1990- 2020
General Factors						
Population size	0.9	1.0	0.9	0.7	0.6	0.7
General Prices ^a	7.4	4.4	3.9	4.0	4.0	4.0
Projection 2						
Total Inpatient Hospital Expenditures	14.6	9.1	10.0	9.2	9.3	9.5
Real Per Capita ^b	5.8	3.5	4.7	4.3	4.5	4.6
Inpatient Prices	1.0	2.1	1.5	1.3	1.3	1.4
All Other	4.7	1.5	3.3	3.0	3.1	3.1
Utilization (Days Per Capita)	0.5	-3.1	0.9	1.0	1.1	1.0
Population Mix	0.6	0.5	0.5	0.6	0.8	0.7
Other	-0.2	-3.6	0.4	0.4	0.3	0.4
Intensity (Cost Per Day)	4.2	4.7	2.5	2.0	2.0	2.1
Population Mix	0.0	-0.1	-0.1	0.0	0.0	0.0
Other	4.2	4.8	2.6	2.0	2.0	2.1

(Continued)

Table A.1 (Continued)

	1970- 1980	1980- 1990	1990- 2000	2000- 2010	2010- 2020	1990- 2020
Projection 3						
Total Inpatient Hospital Expenditures	14.6	9.1	8.7	7.9	7.6	8.1
Real Per Capita ^b	5.8	3.5	3.7	3.0	2.8	3.2
Inpatient Prices	1.0	2.1	1.5	1.3	1.1	1.3
All Other	4.7	1.5	2.2	1.7	1.7	1.9
Utilization (Days Per Capita)	0.5	-3.1	0.9	1.0	1.1	1.0
Population Mix	0.6	0.5	0.5	0.6	0.8	0.7
Other	-0.2	-3.6	0.4	0.4	0.3	0.4
Intensity (Cost Per Day)	4.2	4.7	1.3	0.7	0.6	0.9
Population Mix	0.0	-0.1	-0.1	0.0	0.0	0.0
Other	4.2	4.8	1.4	0.8	0.6	0.9

^a GNP implicit price deflator.

^b Adjusted for population size and general price growth.

SOURCE: Data provided by Office of National Cost Estimates, Office of the Actuary, HCFA, December 1991.

Table A.2

Outpatient Community Hospital Services
Components of Rate of Growth in Expenditures
Actual for 1970-1990 and Projections 2 and 3 for 1990-2020
(Average Annual Growth Rates, In Percent)

	1970- 1980	1980- 1990	1990- 2000	2000- 2010	2010- 2020	1990- 2020
Projection 2						
Total Outpatient Hospital Expenditures	18.7	17.3	13.6	10.6	10.4	11.6
Real Per Capita ^a	9.4	11.0	8.4	5.6	5.5	6.6
Outpatient Prices	1.0	2.1	1.5	1.3	1.3	1.4
All Other	8.3	8.8	6.8	4.3	4.2	5.1
Utilization (Visits Per Capita)	3.8	3.1	2.6	1.2	1.1	1.7
Population Mix	0.0	0.1	0.1	0.2	0.1	0.2
Other	3.8	3.0	2.4	1.0	1.0	1.5
Intensity (Cost Per Visit)	4.5	5.7	4.2	3.1	3.1	3.4
Population Mix	0.1	0.1	0.1	0.1	0.1	0.1
Other	4.3	5.7	4.1	3.0	3.0	3.3
Projection 3						
Total Outpatient Hospital Expenditures	18.7	17.3	13.8	9.1	8.5	10.4
Real Per Capita ^a	9.4	11.0	8.6	4.2	3.7	5.4
Outpatient Prices	1.0	2.1	1.5	1.3	1.1	1.3
All Other	8.3	8.8	7.0	2.9	2.7	4.0
Utilization (Visits Per Capita)	3.8	3.1	2.8	1.0	0.9	1.5
Population Mix	0.0	0.1	0.1	0.2	0.1	0.2
Other	3.8	3.0	2.6	0.8	0.8	1.4
Intensity (Cost Per Visit)	4.5	5.7	4.1	1.9	1.8	2.5
Population Mix	0.1	0.1	0.1	0.1	0.1	0.1
Other	4.3	5.7	4.0	1.8	1.7	2.5

^a Adjusted for population size and general price growth.

SOURCE: Data provided by Office of National Cost Estimates, Office of the Actuary, HCFA, December 1991.

Table A.3

Physician Services
Components of Rate of Growth in Expenditures
Actual for 1970-1990 and Projections 2 and 3 for 1990-2020
(Average Annual Growth Rates, in Percent)

	1970- 1980	1980- 1990	1990- 2000	2000- 2010	2010- 2020	1990- 2020
Projection 2						
Total Physician Service Expenditures	11.9	12.2	10.9	8.9	8.5	9.4
Real Per Capita ^a	3.3	6.4	5.8	4.0	3.7	4.5
Medical Prices	0.6	2.5	1.3	1.3	1.3	1.3
All Other	2.6	3.9	4.5	2.6	2.4	3.1
Utilization (Visits Per Capita)	0.3	0.3	0.7	0.4	0.4	0.5
Population Mix	0.1	0.1	0.1	0.2	0.2	0.2
Other	0.2	0.2	0.5	0.2	0.2	0.3
Intensity (Cost Per Visit)	2.3	3.6	3.8	2.2	2.0	2.6
Population Mix	0.2	0.1	0.1	0.1	0.0	0.0
Other	2.1	3.5	3.7	2.2	2.0	2.6
Projection 3						
Total Physician Service Expenditures	11.9	12.2	10.5	7.8	7.2	8.5
Real Per Capita ^a	3.3	6.4	5.4	2.9	2.5	3.6
Medical Prices	0.6	2.5	1.0	0.5	0.3	0.6
All Other	2.6	3.9	4.5	2.4	2.1	2.9
Utilization (Visits Per Capita)	0.3	0.3	0.7	0.4	0.4	0.5
Population Mix	0.1	0.1	0.1	0.2	0.2	0.2
Other	0.2	0.2	0.5	0.2	0.2	0.3
Intensity (Cost Per Visit)	2.3	3.6	3.8	2.0	1.7	2.4
Population Mix	0.2	0.1	0.1	0.0	0.0	0.0
Other	2.1	3.5	3.7	2.0	1.7	2.4

^a Adjusted for population size and general price growth.

* Not available.

SOURCE: Data provided by Office of National Cost Estimates, Office of the Actuary, HCFA, December 1991.

Table A.4

Nursing Home Services
Components of Rate of Growth in Expenditures
Actual for 1970-1990 and Projections 2 and 3 for 1990-2020
(Average Annual Growth Rates, in Percent)

	1970- 1980	1980- 1990	1990- 2000	2000- 2010	2010- 2020	1990- 2020
Projection 2						
Total Nursing Home Expenditures	14.4	10.1	9.6	9.5	9.2	9.4
Real Per Capita ^a	5.6	4.4	4.6	4.6	4.4	4.5
Nursing Home Prices	0.4	1.3	1.1	1.0	1.0	1.0
All Other	5.1	3.1	3.5	3.5	3.3	3.5
Utilization (Days Per Capita)	3.1	0.2	0.8	1.0	0.8	0.9
Population Mix	2.1	1.4	1.3	1.0	0.8	1.1
Other	0.9	-1.2	-0.6	0.0	0.0	-0.2
Intensity (Cost Per Day)	2.0	2.9	2.7	2.5	2.5	2.6
Population Mix	*	*	*	*	*	*
Other	*	*	*	*	*	*
Projection 3						
Total Nursing Home Expenditures	14.4	10.1	9.3	8.0	7.7	8.3
Real Per Capita ^a	5.6	4.4	4.3	3.1	2.9	3.4
Nursing Home Prices	0.4	1.3	0.7	0.6	0.7	0.7
All Other	5.1	3.1	3.5	2.5	2.3	2.7
Utilization (Days Per Capita)	3.1	0.2	1.0	1.0	0.8	0.9
Population Mix	2.1	1.4	1.3	1.0	0.8	1.1
Other	0.9	-1.2	-0.3	0.0	0.0	-0.1
Intensity (Cost Per Day)	2.0	2.9	2.5	1.5	1.5	1.8
Population Mix	*	*	*	*	*	*
Other	*	*	*	*	*	*

^a Adjusted for population size and general price growth.

* Not available.

SOURCE: Data provided by Office of National Cost Estimates, Office of the Actuary, HCFA, December 1991.

Table A.5

National Health Expenditures
Components of Rate of Growth in Expenditures
under Projections 2 and 3 for 1990-2020
(Average Annual Growth Rates, in Percent)

	Total NHE	Hospitals ^a		Physicians	Nursing Homes ^b
		Inpatient	Outpatient		
Projection 2					
Total Spending	9.2	9.5	11.6	9.4	9.4
Real Per Capita ^c	4.2	4.6	6.6	4.5	4.5
Health Prices	1.2	1.4	1.4	1.3	1.0
All Other	3.1	3.1	5.1	3.1	3.5
Utilization	^d	1.0	1.7	0.5	0.9
Population Mix	^d	0.7	0.2	0.2	1.1
Other		0.4	1.5	0.3	-0.2
Intensity ^e	^d	2.1	3.4	2.6	2.6
Population Mix	^d	0.0	0.1	0.0	^d
Other		2.1	3.3	2.6	
Projection 3					
Total Spending	8.0	8.1	10.4	8.5	8.3
Real Per Capita ^c	3.1	3.2	5.4	3.6	3.4
Health Prices	0.9	1.3	1.3	0.6	0.7
All Other	2.2	1.9	4.0	2.9	2.7
Utilization	^d	1.0	1.5	0.5	1.0
Population Mix	^d	0.7	0.2	0.2	1.1
Other		0.4	1.4	0.3	-0.1
Intensity ^e	^d	0.9	2.5	2.4	1.8
Population Mix	^d	0.0	0.1	0.0	^d
Other		0.9	2.5	2.4	

^a Community hospitals. Excludes Federal hospitals and other hospitals with average stays longer than 30 days, such as psychiatric hospitals or rehabilitation facilities.

^b Nursing homes, not including intermediate care facilities for the mentally retarded (ICF-MR).

^c Total growth adjusted for general price inflation (4.0 percent) and average growth in population size (0.7 percent).

^d Not available, separately.

^e Residual, which represents growth in cost per visit (for physicians visits or outpatient services) or cost per day (for inpatient hospitals and nursing home services) in excess of growth due to other causes.

Table A.6

**National Health Expenditures
Components of Rate of Growth
under Projection 1, 1990-2030
(Average Annual Growth Rates, in Percent)**

	1990-2000	2000-2010	2010-2020	2020-2030
Projection 1				
Total Expenditures	9.8	9.7	9.5	9.7
Population Size	0.9	0.7	0.6	0.7
General Inflation ^a	3.9	4.0	4.0	4.0
All Other	4.7	4.7	4.7	4.7

^a GNP implicit price deflator.

SOURCE: Data provided by Office of National Cost Estimates, Office of the Actuary, HCFA, December 1991

Table A.7

National Health Expenditures
Components of Rate of Growth in Expenditures
Actual for 1970-1990 and under Projections 4 for 1990-2020
(Average Annual Growth Rates, in Percent)

	1970- 1980	1970- 1990	1990- 2000	2000- 2010	2010- 2020	1990- 2020
General Factors						
Population size	0.9	1.0	0.9	0.7	0.6	0.7
General Prices ^a	7.4	4.4	3.9	4.0	4.0	4.0
Total Inpatient Hospital Expenditures	14.6	9.1	7.1	6.5	6.4	6.7
Real Per Capita ^b	5.8	3.5	2.2	1.7	1.7	1.9
Inpatient Prices	1.0	2.1	0.2	0.0	0.0	0.1
All Other	4.8	1.4	2.0	1.7	1.7	1.8
Population Mix	0.6	0.6	0.5	0.6	0.8	0.6
Other	4.2	0.8	1.5	1.1	0.9	1.2
Total Outpatient Hospital Expenditures	18.7	17.3	7.7	6.2	5.7	6.6
Real Per Capita ^b	9.4	11.2	2.7	1.4	1.1	1.7
Outpatient Prices	1.0	2.1	0.2	0.0	0.0	0.1
All Other	8.3	8.9	2.5	1.4	1.1	1.6
Population Mix	0.1	0.2	0.2	0.3	0.2	0.2
Other	8.2	8.7	2.3	1.1	0.9	1.4

(Continued)

Table A.7 (Continued)

	1970- 1980	1980- 1990	1990- 2000	2000- 2010	2010- 2020	1990- 2020
Total Physician Service Expenditures	11.9	12.2	7.1	6.2	5.8	6.4
Real Per Capita ^b	3.3	6.4	2.2	1.4	1.1	1.3
Medical Prices	0.6	2.5	0.2	0.0	0.0	0.1
All Other	2.7	3.8	2.0	1.4	1.1	1.5
Population Mix	0.3	0.2	0.2	0.3	0.2	0.2
Other	2.4	3.6	1.8	1.1	0.9	1.3
Total Nursing Home Expenditures (without ICFMR)	14.4	10.1	8.0	7.0	6.4	7.1
Real Per Capita ^b	5.6	4.4	3.0	2.2	1.7	2.3
Medical Prices	0.4	1.3	0.1	0.0	0.0	0.0
All Other	5.2	3.1	2.9	2.2	1.7	2.3
Population Mix	2.1	1.4	1.3	1.0	0.8	1.1
Other	3.0	1.7	1.5	1.1	0.9	1.2

^a GNP implicit price deflator.

^b Adjusted for population size and general price growth.

SOURCE: Data provided by Office of National Cost Estimates, Office of the Actuary, HCFA, December 1991.

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